

ISSN 2547-9067

# Greek Defence News

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

**ISSUE: May-June 2022**

**VOL. 22/ No 5-6**



**Bonus Distribution**

2022  
**EUROSATORY**  
13-17 JUNE 2022 / PARIS



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**GREEK DEFENCE NEWS** is a bi-monthly defence and security review published by **DBDC INTERNATIONAL DEFENCE PUBLICATIONS&EVENTS LIMITED** covering security matters as well as political, military and defence industrial issues in Greece, Cyprus and in the region of the Southern Eastern Europe. No material may be reproduced without the recent content of the editor.

**Annual subscription rate:**

-Print + Digital 120 euro (Air mail surcharge is included)

-Digital 60 euro



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## Wheeled armoured vehicles

Many countries have developed wheeled armoured carriers to serve in a variety of roles, including infantry transport, reconnaissance, antitank defense, fire support, engineering, command and control, and medical evacuation. Wheeled vehicles generally have advantages over tracked vehicles in improved on-road performance, better fuel economy, and lower maintenance costs. They are therefore particularly useful in the type of peacekeeping and counterinsurgency operations that have grown more prevalent since the end of the Cold War.

An armoured wheeled fighting vehicle AFV is a combat vehicle, protected by strong armour and armed with weapons, which combines operational mobility, tactical offensive, and defensive capabilities.

The Soviet army introduced the first of a successful line of wheeled armoured vehicles, the BTR-60, in the early 1960s. In a typical configuration the BTR-60 weighs 10.1 tons, has a two-man crew, can carry 12 infantrymen, and is armed with a 12.7-mm heavy machine gun. The Soviets introduced improved versions in the late 1970s (BTR-70) and late 1980s (BTR-80). These latter versions included a turret-mounted 14.5-mm heavy machine gun and improved power plants, but troop capacity was reduced to accommodate these improvements. The Soviets used the BTR vehicles extensively in the Afghan War from 1979 to 1989.

Beginning in 1983, the U.S. Marine Corps fielded the LAV-25, a wheeled light armoured vehicle with all-terrain capabilities. The LAV-25 weighs 12.8 tons, has a three-man crew, can carry six infantrymen, and is armed with a turret-mounted 25-mm chain gun and two 7.62-mm machine guns.



For roughly two decades the LAV-25 was the only significant U.S. wheeled armoured vehicle program, but in the late 1990s the desire for more rapidly deployable forces convinced the U.S. Army to develop a wheeled armoured vehicle capable of transport by aircraft such as the C130 Hercules. To speed the development process, the Army stressed the use of off-the-shelf technology. The result was the Stryker Infantry Carrier Vehicle (ICV), first fielded in 2003. The Stryker was largely modeled after the Canadian LAV III, which began service with the Canadian Army in 1999 and in turn is based on the Swiss Piranha III. The Stryker weighs 18 tons, has a two-man crew, can carry nine infantrymen, and in its primary variant is armed with an M2 .50-inch heavy machine gun or a 40-mm automatic grenade launcher housed in a remotely operated turret.

The wars in Iraq and Afghanistan quickly demonstrated the vulnerability of lightly armoured vehicles to mines, rocket-propelled grenades, and improvised explosive devices (IEDs). The U.S. Army responded at first with improvisations, such as adding metal caging around the exterior of Stryker vehicles to cause incoming warheads to detonate prematurely, and by adding armour to its fleet of High Mobility, Multipurpose Wheeled Vehicles (HMMWVs, or Humvees).

Last November the Hellenic Army received from the US the first batch of 44 M1117 Guardian armoured vehicles as part of the US Excess Defense Articles (EDA) program and has recently received another delivery of 130 M1117 armored security vehicles from the total of 1200 vehicles which has been approved by the US Congress.

On the occasion of the first edition of the DEFEA 2021 exhibition which was held in Athens from July 13 to 15, 2021, Nexter showcased for first time its VBCI named Philoctetes, in reference to the mythological hero of the Trojan War. Philoctetes is the proven solution for high-intensity operations:

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- Be resilient and sustainable anywhere
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This is a complete infantry combat system, armed with a remotely operated 40mm CT (cased telescoped) turret from CTAi and a medium range missile launcher (MMP) from MBDA.

Nexter's 40CT gun on the VBCI Philoctetes, chosen by the French (Rapid-fire, JAGUAR), British (Ajax) and Belgian (JAGUAR CaMo) armies, gives a real superiority of caliber compared to the 30mm and covers a wider range of targets (UAVs, aircrafts, light vehicles) VBCI Philoctetes meets the Hellenic Army's requirements for mobility, protection, modularity, and firepower.

# VBCI PHILOCTÈTE



Nexter, land defense architect and system integrator in France, is a major reference in armored combat systems, artillery, and in the ammunition field. Nexter designs innovative solutions for land, air, sea and security forces, in order to bring French and foreign armed forces a decisive operational advantage.



# ***Interview with The Deputy Minister of National Defence Mr Nikolaos Chardalias***



territorial integrity, political independence and sovereign rights, as well as guaranteeing a sense of security for every Greek citizen. That said, our current main objective as Ministry of National Defence is boosting our power projection capabilities in the entire area of the Aegean and the Eastern Mediterranean. I firmly believe that we are on the right track for cementing Greece's status as a factor of stability in the South Eastern flank of NATO and the EU.

## **Greek Defence News: What are the Hellenic Armed Forces' transformation priorities?**

The Hellenic Armed Forces went through a decade-long period of austerity and budget cuts, as a direct result of the financial crisis that plagued our country. Those days belong in the past. Our government has undertaken an ambitious effort to build a force that by 2030 will be able to secure the 21<sup>st</sup> century battlefield against all kinds of threats, both conventional and asymmetric. To this end, we place special emphasis on the

modernization of our joint operations doctrines, the enhancement of our cyber defence capabilities and the further professionalization of our enlisted personnel.

## **Greek Defence News: Are you optimistic about the future of the Greek-Turkish Relations?**

As ever, Greece strongly desires amicable relations with Turkey. We believe that cooperation between our countries would be beneficial for the people of both of them. However, Turkey insists on taking the counterproductive path of provocations, illegitimate claims and violations of International Law. During the last months, we have also borne witness to its ambiguous position towards Russian aggression against Ukraine, which threatens to undermine NATO's much needed unity of response in a time of crisis. Certainly, this is not the kind of posture that we would call suitable for improving not only our bilateral relations but also Turkey's relations with the rest of the Alliance. However, we always leave the door open for a rapprochement, should Turkey change its attitude and commit itself to dialogue in good faith, within the framework of International Law.

The National Defence of Greece is planned, determined and implemented in the framework of a broad institutional, political and military concept. Greece's Emerging Security Challenges and the Hellenic Armed Forces Modernization outline the main priorities of the Hellenic Ministry of National Defence.

From significant defence purchases and agreements with allies such as France and the United States, to the volatile relationship with neighbouring Turkey, the implementation of Greece's Defence Policy aims to strengthen the country's deterrence capability.

The Deputy Minister of National Defence Mr Nikolaos Chardalias in an exclusive interview given to the Greek Defence News reports on the latest developments.

## **Greek Defence News: What are the greatest challenges facing Greece's defence policy?**

Our defence and national security policy aims first and foremost at the protection of our country's



**Greek Defence News: How do you assess the current security situation in the Balkans, North Africa and in the Middle East? Which is the role that Greece has to play?**

We live in a volatile era of international turmoil. The Russian invasion of Ukraine ushered the Western world in a new era, where the need for a new security architecture (including a radically revised energy security strategy) in Europe is stronger than ever before. This is not to say that preceding problems in other hotbeds of the globe have suddenly disappeared. For example, the illegal occupation of the northern part of Cyprus persists. Revisionist powers continue to intervene with unacceptable methods, including the illegal use of force, in Syria, Libya, and elsewhere. The Middle East remains a boiling cauldron of tensions. On the contrary, Greece stands as a pillar of stability and democracy in the region, with the rule of law as the central tenet of its foreign and defence policies. As such, our country will continue to advocate and act in favor of Western unity and common European defence and foreign policy, while aligning and coordinating its position with other like-minded actors in the region.

**Greek Defence News: Which are the procurement program's priorities for the Hellenic Army, Navy, Air Force under the current defence budget constraints?**

During the past three years, our government has attached particular importance to the need to decidedly boost the capabilities of our Armed Forces in the air and naval domains. I will not expand on the milestone acquisition of three Belharra frigates (plus another in option) or twenty four Rafale fighters, and their armaments, since those initiatives are by now well known to the public. I will, however, underline that there are many other substantial procurement programs pending for the three service branches of the Armed Forces. For example, we have activated important support programs for the flying transport assets of our Army, like the Boeing CH-47 and NH-90 helicopters, we have agreed with the United States for the procurement of seven MH-60 'Romeo' helicopters with exceptional ASW capabilities, and we are rapidly proceeding to the integration of 1.200 M1117 Armored Security Vehicles allocated to us by the USA through the Excess Defence Articles (EDA) program.

**Greek Defence News: The Hellenic defence industry is facing a wide variety of problems, the most important of which is its development. How is the Hellenic Ministry of Defence assisting this target?**

It is true that the national defence industry was neglected during the previous decades, for various well-known reasons. However, during the last three years, our government has undertaken a systematic effort to reverse this unacceptable situation. That is why, for example, during the negotiations with France for the conclusion of the recent Strategic Partnership Agreement, we insisted on the inclusion of a specific provision for the advancement of cooperation between the defence industries of the two countries. In addition, Greece is a pioneer in the field of EU defence industry. We are actively involved in the Permanent Structured Cooperation (PESCO), in six cases as project coordinators, as well as the European Defence Fund (EDF). Both these initiatives provide excellent opportunities for developing the industrial base and increasing the competitiveness of the Greek defence companies. All things considered, I am confident about the medium and long-term prospects of the defence industry sector. The potential is there, the government's support is there, the inherent Hellenic aptitude for innovation is there.

**Greek Defence News: What are your views for the European defence industry and how will the European Defence Agency provide them?**

I recently participated in the ministerial meeting of the Steering Board of the EDA in Brussels. During the meeting, we were presented with the results of an EDA analysis concerning the investment gaps in the EU defence field and approved the establishment of a 'Hub for EU Defence Innovation', aimed at strengthening the Agency's existing innovation activities and initiating new ones. The Greek Government's firm belief, which I expressed to our European partners, is that the developments in Ukraine highlight the need for enhanced strategic autonomy and resilience of the EU. Consequently, we need to increase expenditures for defence investments, emphasizing cutting edge technology, while achieving joint efforts and avoiding overlapping and duplication of efforts between the Member States. The above can be accomplished by the full exploitation of tools like PESCO and EDF. In addition, we need to ensure that the financial regulations of the EU reflect appropriate consideration of the external threats and challenges to Europe, and thus do not hinder the development of a genuine and effective common defence and security policy.



## **Greek Defence News: What are your plans on fighting corruption and proceeding to investigations on defence procurements that have been approved by previous governments?**

This government considers transparency and accountability as the main pillars of the entirety of its political agenda. Naturally, this includes the sensitive sector of national defence. Every mismanagement or corruption case that surfaces is investigated in accordance with the Ministry's internal procedures and the directions provided by the independent judiciary.

## **Greek Defence News: Which is the status of the Greek-USA military cooperation?**

The strategic defence cooperation between Greece and the USA is at an excellent level. Greece is the main partner of the United States in the Balkans and the Eastern Mediterranean. As the Prime Minister underlined during his historic recent address to the US Congress, this state of affairs is the result not just of common strategic priorities, but also of shared values and a shared history. The high level of alignment between the two countries was reflected in the recent five-year extension of the Mutual Defence Cooperation Agreement (MDCA) and its ratification by the Hellenic Parliament. This milestone agreement ensures a welcomed increase of the US military footprint in our country, especially in the sensitive areas of Alexandroupoli and Souda Bay, but also at Stefanovikeio and Larissa. In addition, it will provide added value to the Armed Forces of both countries by facilitating joint exercises and will stimulate economic growth through American investments in infrastructure projects of common interest. I believe we have every reason to be optimistic and confident about the future of relations between Athens and Washington, in the field of defence and beyond.

## **Greek Defence News: What is the ministry's strategy for developing the Greek-Russian military and defence industry cooperation at the timing where USA, EU and NATO are strongly opposed to the Russian foreign policy towards Ukraine?**

Let me be frank: President Putin's unprovoked and unjustified decision to invade Ukraine undermined the possibility of any cooperation between Greece and the Russian Federation in the field of defence for the foreseeable future. On the contrary, Greece, as a core part of the West, supports the comprehensive packages of sanctions, including the military and defence sectors, adopted by the EU with the aim to weaken the Kremlin's ability to prosecute its war of aggression. Despite the historic and cultural ties between our two peoples, I cannot

imagine the development of military cooperation between Greece and Russia, until Moscow puts an end to this brutal and reckless invasion and commits to respecting Ukraine's integrity, sovereignty and independence. That is, after all, not only the solemn duty of everyone who believes in Western values, but also our obligation towards the Greek minority in Ukraine.

### **NIKOLAOS CHARDALIAS**

#### **DEPUTY MINISTER OF NATIONAL DEFENCE**



He was born on 10 November 1968 in Vironas and he is a native of Granitsa, Evrytania.

He is a distinguished graduate of Varvakeios School.

He has studied Political Sciences and International Relations at KENT University, England, and specialised in Regional Development and European Integration.

He served in the Air Force (1996-1998).

He has been Mayor of Vironas for 3 four-year terms (2003-2014), President of Imittos Protection and Development Association-SPAY (2003-2014), as well as President of the Civil Protection Committee of the Central Union of the Municipalities of Greece-KEDE (2006-2012), Executive Secretary of Central Greece Region (2014-2016) and Attica Regional Elected Councilor (2014-2019).

He has also been Secretary General of Civil Protection from 19 July 2019 to 16 March 2020 and Deputy Minister of Civil Protection and Crisis Management from 17 March 2020 to 31 August 2021, with the latter being the date of his appointment as Deputy Minister of National Defence.

He is married to Ms Panagiota Panagiotopoulou, a Physical Education Professor, graduate of the Faculty of Physical Education and Sport Science (Athens TEFAA) and has two daughters, Ioanna and Dimitra.

He speaks English and French.

## MINISTRY OF DEFENCE

**➔ Second Meeting of Ukraine Defense Contact Group**

On 23 May 2022, the Minister of National Defence Mr. Nikolaos Panagiotopoulos and the Chief/HNDGS General Konstantinos Floros participated in a virtual meeting along with the Defence Ministers and Senior Officials from 47 countries, the EU High Representative for Foreign Affairs and Security Policy, the Vice-President of the Commission Mr. Josep Borrell, the Supreme Allied Commander Europe General Tod Wolters, hosted by the US Secretary of Defence Mr. Lloyd Austin, following a defence ministers meeting at "Ramstein" Air Base, in Germany.

New coastal defense systems and more artillery, armor, and tanks were highlighted among Ukraine's needs as its major shipping port remains closed, cutting off the country economically from the world. Austin and Chairman of the Joint Chiefs of Staff Army Gen. Mark A. Milley told reporters that targeted assistance will continue but that Ukraine's political leadership alone would decide any concessions to Russian President Vladimir Putin to end the conflict.

"In terms of what his overall strategy is, that's unknown," Austin said of Putin's thinking, speaking in the Pentagon briefing room following the group meeting. "Our effort is to do everything that we can to strengthen Ukraine's hands on the battlefield and also at the negotiation table."

In recent days, Russia has expelled Ukrainian opposition from the Sea of Azov port city of Mariupol and has consolidated gains in the Russian-speaking east of the country. Experts believe Russia will begin a tight administration of the city, protect against a counteroffensive, and expand gains in the south of the country to cut Ukraine off from the Black Sea.

Milley said the U.S. will continue to provide arms to Ukraine for as long as directed while better managing the risk of escalation with Moscow now that a military-to-military communication channel has re-opened. Meanwhile President Joe Biden signed a \$40 billion Ukraine assistance bill May 19 that will continue to flow arms until at least September.

Targeted U.S. assistance packages include long-range weapons, armor, and unmanned aerial vehicles, Austin said.

"We've gained a sharper and shared sense of Ukraine's priority requirements and the situation on the battlefield," Austin said, noting the contact group



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participation of Ukraine Defense Minister Oleksii Reznikov.

“In terms of what their needs are, they really are pretty much the same as they were the last time we talked,” Austin said, referring to an April 26 in-person meeting at Ramstein Air Base, Germany. “The fight is really shaped by artillery in this phase.”

Austin refused to speak to specific new systems that may be under discussion, such as the High Mobility Artillery Rocket System (HIMARS). Milley, however, said the U.S. continues training Ukrainian troops on modern weaponry in several nearby countries.

Austin also said the meeting of the contact group included new nations Austria, Bosnia-Herzegovina, Ireland, Colombia, and Kosovo, expanding the network of countries willing to provide aid to Ukraine.

New arms donations highlighted by the defense secretary included Danish Harpoon anti-ship launchers and missiles; Czech attack helicopters, tanks, and rocket systems; and more artillery from Italy, Greece, Norway, and Poland. Overall, Austin said the United Kingdom has played a “leading role” in helping to coordinate and send its arms into Ukraine.

Austin will next meet with members of the contact group on the sidelines of the NATO defense ministerial in Brussels on June 15.

## ➡ **Greece, Germany agreement on arms swap military cooperation deal for Ukraine**



On 1st June 2022, the Hellenic Ministry of National Defence announced that Greece will supply the Ukrainian armed forces with BMP-1 infantry armoured fighting vehicles in exchange for German Marders under a defence cooperation agreement to be signed between Greece and Germany. Two days earlier German Chancellor Olaf Scholz said that Greece will transfer its Soviet-era infantry

armoured fighting vehicles to Ukraine in exchange for heavy machinery provided by Berlin. The Chancellor noted that he reached this agreement with Greek Prime Minister Kyriakos Mitsotakis during the meeting in Brussels earlier in the day.

At the end of February, Greece delivered military aid to Ukraine, more specifically Kalashnikov rifles and portable rocket launchers, but in mid-April, Greek Defence Minister Nikos Panagiotopoulos said Athens was not planning to send more.

## ➡ **Acceptance of 130 M1117 Wheeled Armour Security Vehicles**



On 29 and 30 April 2022, the acceptance of 130 M1117 Wheeled Armour Security Vehicles (ASV) was conducted in Thessaloniki. These vehicles are added to the 44 received in December 2021.

The M1117 are granted to our country through the program of Excess Defence Articles – EDA of the USA and are utilized in missions of area reconnaissance and surveillance, substantially enhancing the operational capabilities of the Army, due to their flexibility and reinforced armour. The acceptance of the M1117 ASV will continue in the near future, as scheduled.

## ➡ **Participation of the Hellenic Army Academy to the SANDHURST 2022 International Competition**

On 29 and 30 April 2022, the SANDHURST MILITARY SKILLS international competition was conducted at West Point, NY.

A total of 48 squads participated in the competition including 35 from the USA (West Point and other Academies) and 13 from other countries (Australia, Brazil, Germany, Georgia, Denmark, Italy, Mexico, South Korea, Poland, Chile, Canada (with 2 squads) and United Kingdom (with 2 squads)).

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The Hellenic Army Academy also participated with a squad consisting of two accompanying Officers, one Physical Education professor and 11 Cadets.

The competition entailed a demanding schedule of 17 activities and the Hellenic Army Academy was placed 6th in the aggregate ranking, 1st among the foreign countries, while it was awarded the MOST LETHAL SQUAD award, since it finished first in the aggregate ranking among the competing squads in fire with rifle, pistol and grenade launcher.

## HELLENIC ARMED FORCES ARMAMENT PROGRAMS

### HELLENIC ARMY

#### ➔ Acceptance of 130 M1117 Wheeled Armour Security Vehicles

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### HELLENIC NAVY

#### ➔ Six brand new Rigid Inflatable Boats (RIBS) for the Hellenic Navy and the Hellenic Coast Guard



© US Embassy

On the 19 May 2022, US Embassy in Athens delivered 6 brand new Rigid Inflatable Boats (RIBS), to be used by the Hellenic Navy and two to be used by the Hellenic Coast Guard, value of \$10million.



## Enhancing Mission Effectiveness

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The US embassy tweeted. "Great to see 6 brand new Rigid Inflatable Boats (RIBS) from the United States delivered to the @NavyGR and @HCoastGuard Special Forces today. This \$10 million US grant is an important investment in maritime and Special Operation Forces interoperability for our countries. @hndgspio"

The reception of the RHIBs was attended by the Deputy Chief of the Fleet, Rear Admiral P. Koulouris HN, the American Defense Attache, Captain M. Biesy USN, the head of ODC/GREECE, Colonel D. McDonald USA and the Commander of Hellenic Navy Special Forces, Lieutenant Commander K. Nasopoulos HN. The boats are going to be integrated in HNSFC's inventory, upgrading its operational capabilities.

Defence Mr. Nikolaos Panagiotopoulos had a meeting on Tuesday, 24 May 22, with a cadre of the Joint Strike Fighter Program Office (JSF PO) regarding the fighter aircraft F-35. The meeting was also attended by the Ambassador of the USA in Athens Mr. George James Tsunis. Defence Minister underlined that the procedure for the procurement of F-35 aircraft meet operational requirements of the Hellenic Airforce and will start immediately.

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

### HELLENIC AIR FORCE

#### ➔ Greece to buy F-35



© MOD

Greek government spokesman confirmed that Greece has decided that the fifth-generation fighter aircraft of the Air Force will be the US F-35. PM Kyriakos Mitsotakis expressed the desire for Greece to join the F-35 program during his meeting with President Biden at the White House. Greece plans in buying an F-35 within the next years when country's fiscal restriction allows it.

On 2 May 2022, Defence Minister Panagiotopoulos confirmed that the technical staff consisting of US Pentagon officials participating in the JSF PO (Joint Strike Fighter Program Office) program for the construction of F-35 fighter visited and briefed him in the Greek MOD. The meeting was also attended by the Ambassador of the USA in Athens Mr. George James Tsunis. The Minister of National

#### ➔ RHEINMETALL

On 24 May 2022, a meeting was conducted between the HAGS officers and representatives of the German company Rheinmetall. The aim the meeting was the presentation of the company's Lynx KF41 which is a complete family of vehicles that utilises a common drive module and a flexible mission kit arrangement to allow any base vehicle to be configured as an IFV, an armoured personnel carrier, a command vehicle, a recovery vehicle or an ambulance. Changing from one configuration to another can occur within eight hours. This system provides significant total lifecycle cost savings due to base vehicle commonality, allowing customers to adjust force structures or develop new capabilities in an affordable and timely manner.

Enhancing the vehicle's flexibility, the sub-systems of the Lynx KF41 are highly modular and adaptable. The Lynx KF41 features a digital backbone with a generic open architecture that allows easy integration of new mission systems, while the entire survivability system is modular and upgradable to allow the vehicle to cope with the highly adaptive



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threats faced on the battlefield. Different survivability kits are available for peacekeeping situations, counter-insurgency operations in urban terrain, and mounted combat against a peer. No other vehicle can adapt to diverse environments across the full spectrum of operational challenges like the Lynx KF41 can.

➔ **IAI**



© IAI

On 18 May 2022, a meeting was conducted between the HAFGS officers and representatives of the Israeli company IAI. The aim the meeting was the presentation of the company's EHUD AACMI *Air Combat Training, Debriefing and Safety Enhancement*

The EHUD AACMI (Autonomous Air Combat Maneuvering Instrumentation) is a unique real-time air combat training, debriefing and safety enhancement system for fighter aircraft pilots. EHUD enables live training at a sophisticated level - including the simulated armament firing, real-time hit and miss assessments, and exceptional debriefing capabilities.

The EHUD system provided advanced air-to-air and air-to-ground training with weapon simulations and debriefing capabilities. It has an enhanced safety suite based on an advanced algorithm and a solid test and flight record. It has been improved through testing and operation on 20 different combat aircraft.

Due to the modularity of the system, EHUD is interoperable with additional systems, such as those used with helicopters, air defense, naval, ground ranges, for joint battlespace integration.

Using COTS (commercial of the shelf software) and minimizing aircraft certification requirements, while maximizing reliability and operational flexibility, ensures that the EHUD system has a low life cycle cost (LCC).

The EHUD is used with AIM-9L, R73, SEMAC and Hellfire enclosures, in a range of onboard LRU (line

replaceable unit) boxes, in racks designed for ships, utility helicopters and air defense platforms. It can be installed in additional enclosures as required.

EHUD enables a smooth transition into the LVC (Live Virtual Constructive) world, due to advanced infrastructure that supports embedded constructive entities and simulation sensors. The infrastructure also interconnects with flight and mission simulators and runs joint scenarios. The EHUD family is complemented by advanced mobile and fixed ground stations and a complete range of support equipment.

➔ **BAE SYSTEMS**



© BAE SYSTEMS

On 16 May 2022, a meeting was conducted between the HAFGS officers and representatives of the UK company BAE SYSTEMS. The aim the meeting was the presentation of the company's digital GPS Anti-Jamming Receiver which provides superior jamming immunity in the most severe GPS-challenged environments. The U.S. military and close allies have used GPS on the battlefield for decades. Virtually all military electronic equipment – aircraft, vehicles, radios, computers and guided bombs – relies on GPS for accurate positioning, navigation, and timing (PNT). Threats are increasing and evolving as our adversaries improve their ability to jam and spoof GPS signals. To defend against increasingly available counters capabilities, the military is requiring GPS protection, augmentation, and alternatives that are more resilient and less vulnerable. High-performance GPS anti-jamming protection is available today and should be the foundation of any high-assurance PNT strategy in this evolving anti-access/ area denial (A2/AD) environment. Leveraging over 45 years of military GPS experience and advanced



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technical expertise in anti-jamming technology, BAE Systems now provides digital beamforming GPS anti-jamming in form factors that suit your military needs. DIGAR comprises the best airborne GPS anti-jamming antenna electronics available. It supports 16 simultaneous steered beams to provide superior jamming immunity in the most severe Schillinger environments. The antenna electronics are built upon field-proven GPS anti-jamming weapons technology and state-of-the-art signal processing techniques. As the premier military GPS and anti-jamming provider for weapons such as the Joint Direct Attack Munition (JDAM), Massive Ordnance Penetrator (MOP), Excalibur and others, BAE Systems now offers this superior digital beamforming anti-jamming capability to airborne users.

## ➔ GENERAL ATOMICS



© General Atomics

On 28 April 2022, a meeting was conducted between the HAFGS and HAGS officers and representatives of the US company General Atomics and the Greek Company Altus LSA. The aim the meeting was the presentation of the company's MQ-9B system.

## ➔ NEXTER

On 10 May 2022, a meeting was conducted between the HAFGS officers and representatives of the French company Nexter. The aim the meeting was the presentation of the company's ammunition for the Hellenic Air Force Mirage and Rafale fighter aircraft.

## ➔ Meeting with representatives of Great Britain

On 11 May 2022, a meeting was held, between the General Director of GDDIA, Vice Admiral (rt) Aristeidis Alexopoulos HN and Ms. Charlotte Stimpson, Deputy Director of DSE (UK's Defence Sales Organization) accompanied by representatives of British companies Babcock, THALES UK and MBDA UK, to discuss Issues related to naval armaments.

© Hellenic Coast Guard

## HOMELAND SECURITY

### ➔ Naming ceremony of 2 newly built Coastal Patrol boats of the Hellenic Coast Guard

The naming ceremony of the two newly built Coastal Patrol boats of the Hellenic Coast Guard 900 and 910 was held on 15-04-2021 in the courtyard of the Ministry with the presence of the Prime Minister, Mr. Kyriakos Mitsotakis. The vessels are expected to be received by the end of 2021. The contract signing took place on 22.01.2019 between the Ministry of Shipping & Insular Policy and the company "CANTIERE NAVALE VITTORIA S.P.A." which is based in Italy. The total value of all vessels amounts to 55,560,000 million euros. The financing took place through the FRONTEx Special Equipment Action of



2022

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2018 key figures

the European Internal Security Fund, with a 90% Participation and a 10% National Participation. The vessels were built in Italy with specifications prepared by officers of the Hellenic Coast Guard in order to fully cover the operational needs of the Agency.

## NATO

### ➔ Finland and Sweden submit applications to join NATO



© NATO

Finland and Sweden on Wednesday morning, 18 May 2022, simultaneously handed in their official letters of application to join NATO.

NATO Secretary General Jens Stoltenberg meets with Klaus Korhonen (ambassador of Finland accredited to NATO) and Axel Wernhoff (ambassador of Sweden accredited to NATO)

The letters were conveyed by the Finnish Ambassador to NATO Klaus Korhonen and respectively, the Swedish Ambassador to NATO Axel Wernhoff, to NATO Secretary General Jens Stoltenberg at the Alliance's Brussels headquarters. Mr. Stoltenberg warmly welcomed the requests, saying "this is a good day, at a critical moment for our security."

NATO Secretary General Jens Stoltenberg made the following remarks: "This is a good day, at a critical moment for our security. Thank you so much for handing over the applications for Finland's and Sweden's membership in NATO. Every nation has the right to choose its own path. You have both made your choice, after thorough democratic processes. And I warmly welcome the requests by Finland and Sweden to join NATO. You are our closest partners. And your membership in NATO would increase our shared security. The applications you have made today are an historic

step. Allies will now consider the next steps on your path to NATO. The security interests of all Allies have to be taken into account. And we are determined to work through all issues and reach rapid conclusions. Over the past few days, we have seen numerous statements by Allies committing to Finland's and Sweden's security. NATO is already vigilant in the Baltic Sea region, and NATO and Allies' forces will continue to adapt as necessary. All Allies agree on the importance of NATO enlargement. We all agree that we must stand together. And we all agree that this is an historic moment, which we must seize. So thank you, it is great to see you both."

### ➔ NATO announces nomination of General Christopher G. Cavoli as Supreme Allied Commander Europe



© NATO

The North Atlantic Council has approved the nomination of General Christopher G. Cavoli, United States Army, to the post of Supreme Allied Commander Europe. General Cavoli is currently serving as Commander, United States Army Europe, and Africa.

Upon completion of national confirmation processes, he will take up his appointment as the successor to General Tod D. Wolters, United States Air Force, at a change of command ceremony at the Supreme Headquarters Allied Powers Europe in Mons, Belgium, expected in the summer of 2022.

## ESDP

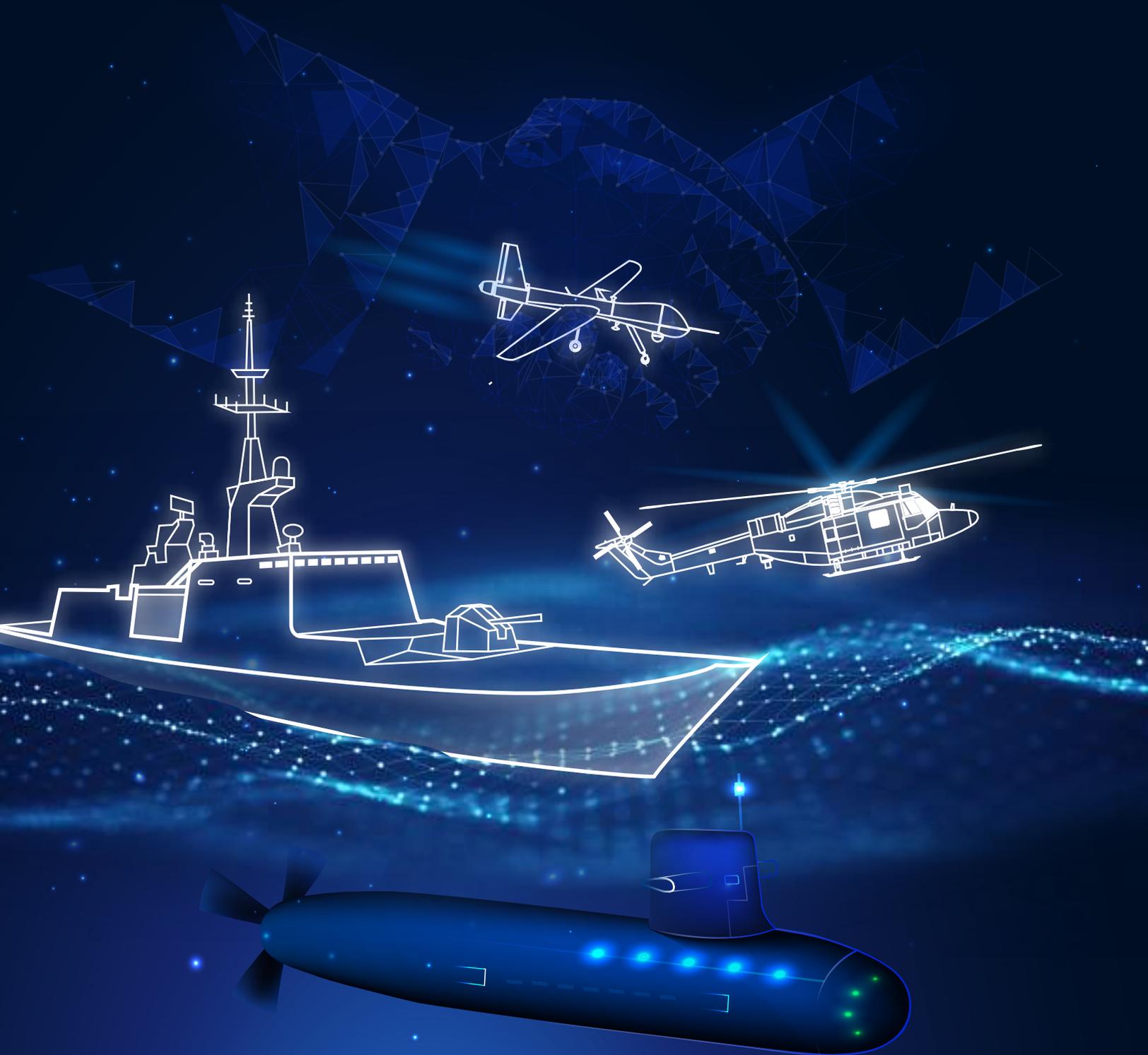
### ➔ First European Defence Innovation Day Calls for More Investment and Cooperation

"We must invest more in defence and make up for years of budget cuts and underinvestment. The message is clear: we need to reduce fragmentation and invest more together, starting now", said High



# EURONAVAL

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Representative/Head of the European Defence Agency, Josep Borrell, during the first European Defence Innovation Day – organised by the European Defence Agency under the auspices of the French Presidency of the Council of the European Union. The event displayed how greater investment and cooperation in defence innovation is crucial to maintain and drive European technological sovereignty.

The Defence Innovation Day marks the official launch - and first activity - of the Hub for European Defence Innovation (HEDI) which was established within EDA following a decision by Member States' Defence Ministers on 17 May. The launch of HEDI is not only an important first delivery of the Strategic Compass, but also a crucial step towards a more innovative European defence. The Head of Agency, Josep Borrell said: "EDA certainly has a key role to play in defence innovation. It has been dealing with innovation since its creation in 2004. And it has already delivered. Successful examples include projects on drone swarms; technologies for electromagnetic railguns; or new clean energy technologies to lower the carbon footprint and decrease energy dependencies in the defence sector. These are all initiatives developed at EDA".

Speaking at the opening of the event, EDA Chief Executive, Jiri Šedivý said: "The creation of the Hub for European Defence Innovation in EDA is an additional sign that Member States are ready to take European defence innovation to the next level, in cooperation with the European Commission but also with NATO". The European Defence Innovation Day also extended to an exhibition highlighting cutting-edge defence innovations developed at national and European level. The exhibition gathered innovators from 19 Member States and 9 developed within the framework of the European Defence Agency. "I'm proud" of EDA's work on innovation so far, "but we have to do more", the Head of the Agency Josep Borrell said, insisting on a close cooperation with the European Commission and its European Defence Fund (EDF), as well as with NATO "because we have the same purpose".

## CYPRUS

### ➔ **Address by the Cypriot Minister of Defence Charalambos Petrides at the Final Phase of the Multinational Exercise Argonaut**

I would like to welcome you today at the Joint Rescue Coordination Centre and Zenon Coordination Center premises for the final phase of our flagship Multinational civ-mil Exercise

ARGONAUT. We are gratified that we were able to resume this important Exercise after a two year hiatus due to the COVID19 pandemic. It is so good to see so many participating and observer countries that took part with military means or personnel.

I want to convey the Republic of Cyprus appreciation for all partner countries that have participated to this Exercise from its planning phase to its conduct. Through the various phases of the Exercises important lessons learned will be drowned that will make our contingency planning and interoperability more robust and strong.

ARGONAUT is a multi-faceted exercise, which since its inception fifteen years ago has been established as one of the most prominent and leading civil-military Exercises internationally dealing with non-combatant evacuation operations. Over the last decade we have created long standing partnerships with many countries and I am pleased to see that there is still growing interest from new countries to engage for this exercise. This year we have 15 countries from the NEO Coordination Group that participated in the NEO phase of the Exercise, 8 countries that are taking part in the Search and Rescue phase as well as the EU 's External Action Service and the UN.

Allow me to highlight the fact that for the first time Egypt and the Kingdom of Saudi Arabia participate to this years Exercise with military means and a high level observer's delegation respectively.

It is also important to mention that this Exercise contributes immensely to our preparedness and readiness to deal with severe crisis incidents and emergency situations within the area of the Eastern Mediterranean, with the implementation of the national plans "ESTIA" and "TEFKROS".

The exercise commenced on Tuesday with the activation and evaluation of the national Plan "ESTIA". In the past two days, other phases of the "ESTIA" plan were practiced at other locations around Cyprus, and notably for the first time at the Port of Limassol. More than 150 participants from abroad were exercised alongside 18 Cyprus government departments and agencies and 17 Resident Embassies in Cyprus took part at the table top Exercise at the Port of Limassol.

In today's final phase, we will observe the final phase of the exercise, is combined with the Search and Rescue phase of the exercise. JRCC Larnaca is a valuable asset for both Cyprus and region for providing critical support for Search and Rescue cooperation and coordination. I want to express my appreciation to all countries participating with

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assets and personnel for this year's final phase, namely Egypt, France, Greece, Israel, Italy, United Kingdom and the United States of America.

It is broadly accepted that the effectiveness of all the agencies involved in the wider field of aviation and maritime safety is an objective to be continuously pursued and this is where the importance of this exercise lies. «ARGONAUT 2022», was a great opportunity for improving preparedness and refresh our conduct and planning to deal with any humanitarian crisis situation in the region.

Moreover, I am absolutely confident that the cooperation with all participating countries will continue and be further improved - at all levels - to the benefit of our common interests. Cyprus is located in an area of perpetual turmoil and instability and there is always the possibility of a conflict or a crisis. Hence we have to remain vigilant, able and ready to facilitate our friends and allies for dealing with crisis situations and provide safe haven for those affected.

Taking this opportunity, I want to underline that the Republic of Cyprus is willing and ready to assume this responsibility to secure the interests of our close partners and for the benefit of the international community.

Our infrastructures and facilities will always be at the disposal of our partners for providing assistance for humanitarian and crisis situations. I would be remiss in not thanking our very own personnel and colleagues from the numerous Ministries and Agencies that have made this Exercise possible.

In closing allow me once again to express my profound appreciation for your countries commitment in working with the Republic of Cyprus for a successful ARGONAUT 2022.

I hope that you enjoyed your stay in Cyprus and we are looking forward welcoming you in ARGONAUT 2023!



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# Oshkosh Defense demonstrated in BSDA 2022 the Joint Light Tactical Vehicle with IDE's WiSPRevo and Hybrid Power Systems on board



© DBDC LTD- IDE's HGT20K 30 hybrid generator

Oshkosh Defense displayed a Joint Light Tactical Vehicle (JLTV) and a JLTV trailer (JLTV-T) at the Black Sea Defense Aerospace and Security (BSDA) Conference 2022 in the Romaero Complex in Bucharest, Romania from May 18-20. To date, Oshkosh has built over 16,000 JLTVs for the U.S. military and its allies, including Belgium, Montenegro, Slovenia, Lithuania, Brazil, Romania, and North Macedonia.

Once more, Oshkosh Defense put to practice its approach to cooperate with international partners and utilize their best-in-class expertise, aiming to enhance the JLTV with specialized subsystems for different missions and roles.

The 4-door Heavy Guns Carrier (HGC) JLTV was fully outfitted with the Elbit 12.7mm Overhead Remote-Controlled Weapons Station, Beth El CBRN (Chemical, Biological, Radiological, Nuclear) collective protection system and Genasys Long Range Acoustic Device – LRAD-450XL.

Furthermore, regarding crew communications and Electric Power Efficiency, the JLTV was equipped with 3 different systems developed and produced by the Hellenic company Intracom Defense (IDE).

WiSPRevo has been integrated in its latest release, to provide an advanced infrastructure of vehicle C4I, as well as noise-free communications. The integration of IDE's GENAIRCON can provide significantly extended true silent watch. Last but not least, the JLTV-T was demonstrated with IDE's Hybridization and Energy Storage System, capable of delivering a tactical hybrid power hub solution for field.

## IDE's Hybridization & Energy Storage System

**(HESS)** is an advanced, military grade deployable solution that can be easily combined with existing conventional generators to optimize their utilization, significantly reducing engine running time and fuel consumption, while providing effective signature management through support of the electric loads with the integrated high-capacity Energy Storage System.

HESS is part of IDE's deployable state-of-the-art Hybrid Electric Power Systems (HEPS) product family that addresses the limitations of legacy generators and is able to supply cost-effective, silent and environmentally-friendly power to installations, remote camps, forward operating bases, communication or surveillance posts, expeditionary or emergency operations and weapon systems.

HESS connects, synchronizes and automatically controls an external diesel generator, effectively "hybridizing" it with its internal Energy Storage System (ESS) and intelligent Energy Management System (EMS). The savings can be further increased due to the HESS capability to directly connect with the utility grid and PV.

HESS provides a number of key operational advantages including:

- Fuel-savings exceeding 50%
- Up to 6 times longer maintenance intervals
- Minimized logistics footprint
- Hours of Silent Operation
- Weeks of Unattended Operation
- Environmental Sustainability



© DBDC LTD- IDE's SAPS GENAIRCON

**The Silent Auxiliary Power System (SAPS)** is a vehicle integrated solution providing sustained auxiliary power to a vehicle's automotive loads and mission systems, with controlled signature management. It is part of IDE's GENAIRCON system, a modular & scalable military vehicle power architecture, capable to address the expanding needs for electric power supply, while increasing the operational capabilities, combat autonomy and survivability of the frontline platforms. SAPS utilises IDE's advanced IDEALIT28-5 Energy Storage Modules (ESM) and an intelligent Charge & Control Unit (iCCU), which provides electrical and control interfaces with the vehicle's engine generator and electrical system, external power sources and Human Machine Interface (HMI).

IDE's SAPS upgrades quantitatively and qualitatively the available electric energy of the platform, while providing crucial operational and support advantages in key areas:

- **Enhanced survivability**, through true Silent Operation capability for prolonged periods.
- **Continuous mission readiness** through uninterrupted power supply, without crew action.
- **Extended autonomy** due to the reduced use of vehicle's engine.
- **Minimized logistics footprint** because of reduced requirements in fuel and spares.
- **Pulse power capability**, enabling the integration of equipment with burst peak-power requirements, extending the existing operational limits.
- **Power Export feature**, transforming the vehicle to a battlefield DC and AC "Energy Hub".

**WiSPRevo** is a Complete Communication & Information System that is designed for use in all military armored and wheeled platforms. WiSPR is fielded in several NATO countries, and it has proven ability to address EU hearing safety regulations.

WiSPR Crew Control Units (CCUs) can be connected in a cascaded and/o star configuration.

In parallel CCU can support connections to Tactical Radios and Loudspeakers. The CCUs are fully IP-based devices that allow the user to select any or all of the available voice services (Intercom, Groups, Nets, etc) for receiving/transmitting. All CCUs implement Advanced Dynamic Noise Reduction functions that eliminate the environmental noise and allow crystal clear communications between the crewmembers and over the tactical radios.

The WiSPR TMN provides multiple Ethernet ports with Power over Ethernet (POE) ports for connection to multiple CCUs as well as any other device on board. TMN incorporates an advanced voice and data switching hardware to support complex communication schemes between the users of a vehicle and users between different vehicles and platforms.

In addition, TMN provides all necessary network infrastructure and a wide range of interfaces to support IP connectivity to C2 systems, IP Radios, platform's velectronics, sensor and actuators as well as legacy tactical radios and wireline connections. Moreover, TMN can also be configured with embedded high-speed IP MANET radio for vehicle-to-vehicle and vehicle-to soldier communications, general purpose MOTS computer to support existing customer's software such as BMS application and a variety of many other hardware modules and interfaces for mission specific requirements.



© IDE's WiSPRevo

## The C-27J Spartan Next Generation towards greater multirole capabilities with the new firefighting configuration

Widely recognised as the most effective tactical transport aircraft in its size, Leonardo's C-27J Spartan Next Generation reaffirms its versatility for multi-mission capabilities with a new Fire Fighter configuration, equipped with a second generation, roll-on/roll-off Modular Airborne Fire Fighting System (MAFFS II)

Dealing with environmental emergencies is an increasingly complex challenge that requires integrated problem-solving management and the implementation of multiple, latest generation, strategic and technological tools to protect people and the territory.

- **A constantly evolving scenario**

From a geographical perspective, Europe, and especially Italy, is one of the world's most complex territories. It is characterised by a vast wealth of fauna and flora and a marked transformation of the natural environment caused by human actions, along with numerous sites of historic interest. These issues are exacerbated further by the problems connected with the global warming, the deforestation, and the intrinsic fragility of the territory. Within this context, fires have enormous social and environmental costs that can often take decades of interventions to restore.

The growing complexities of fires are forcing the individual countries to deal with the challenge in an integrated manner, increasing Europe's firefighting capabilities while taking the specific needs of each country into account.

An effective firefighting system has to meet a number of requirements: reach remote inland areas that are cut off from the sea or other water basins; optimise emergency response times; reduce environmental impact, in line with the European Green Deal directives; employ multi-mission solutions that can cut aircraft operating costs, while ensuring their continuous use, even in the winter months; ensure the availability of a vast number of common platforms with elevated operational flexibility that can deal with a variety of different missions, and the "aircraft system" must have a high degree of interoperability with the assets on the ground.

These increasingly essential capabilities make it possible to gather, share and collect a considerable amount of crucial data and information which, with the appropriate analysis, will optimise the effectiveness of the intervention, reducing operating times and costs, also thanks to logistics and training services, which can also benefit from the support systems already in use and deployed on other missions.

- **The C-27J Spartan Next Generation Fire Fighter: new requirements, same reliability**

Aircraft, which are at the heart of this integrated system, are the most powerful tool at our disposal to help ground personnel put out fires.

Leonardo's C-27J Next Generation Fire Fighter represents the state-of-the-art in airborne firefighting capabilities.

The Fire Fighter configuration proposed by Leonardo is a flexible solution, ideal for enhancing the capabilities of the C-27J Next Generation multi-mission aircraft and has significantly lower purchasing and operating costs than a dedicated firefighting platform.

The system consists in the installation of a removable tank with a capacity of over 8,000 litres of water or 7,600 litres of fire-retardant liquid in the aircraft's cargo bay. A complete set of tools that includes a pressurised tank, an outlet nozzle, a pressurised door, and a ground support system.

In around 90 minutes, the C-27J can be transformed from a tactical transport aircraft to an aerial firefighter, thanks to the palletised Modular Airborne

Fire Fighting System (MAFFS II), developed by United Aeronautical Corporation, a world leader in advanced aerial application systems.

But this solution is not just limited to fighting wildfires, it can also be used for prevention. In fact, the "reclamation" of high-risk territories, which are identified using existing or Leonardo's in-house prevention, control, and early warning systems, can be performed from the C-27J Fire Fighter by





dropping water over an extensive surface area, reducing the possibility of a wildfire outbreak in fire-prone areas.

Furthermore, the aircraft can be used in a complementary way to the amphibious solution to optimize firefighting effectiveness even in complex environmental or morphological conditions, such as high distance of the basins, adverse weather conditions (high waves, bad weather), or to support operations at low visibility and night.

One of the most innovative characteristics of the Leonardo C-27J-based firefighting solution is the rapid reconfiguration of the aircraft when the firefighting mission is over. This multi-functionality proves extremely useful for a variety of civil protection operations, all with the added advantage of greater operational effectiveness than a “traditional” or single-mission aerial fire fighter.

In fact, as well as carrying specialist emergency personnel, the aircraft can also be used for emergency support or transfer missions and/or to deliver the necessary equipment and supplies close to the affected area. Furthermore, when operating in inaccessible and hard to reach zones, the aircraft can be used in the MEDEVAC or Air Ambulance configurations to evacuate, and transport injured people.

- **C-27J: on the front line worldwide**

But the C-27J Spartan Next Generation is much more than a simple fire fighter, it embodies the very essence of the concept of national security, proving its proficiency in defence force operations and making a vital contribution to population support and civil protection tasks. In a world affected by a multitude of emergencies - the pandemic not least - the aircraft has shown it can provide effective, non-stop support to communities in need. A multitude of kits and easy-to-install, transportable roll-on/roll-off

mission systems allow the C-27J to be rapidly transformed into the required configuration for the mission at hand. As a tactical airlifter, the aircraft’s versatility also extends to airlifting cargo and troops; airdropping parachutists and supplies; medical battlefield evacuation; VIP transportation; natural disaster response and humanitarian assistance and support. In fact, during the crucial stages of the Covid-19 pandemic, the aircraft was primarily used for transporting medical supplies and equipment, ferrying medical personnel and coronavirus patients, and, in some cases, for complex transport operations that required the use of bio-containment kits.

The C-27J can be configured in MPA (Maritime Patrol), ASW (Anti-Submarine Warfare) and C3ISR (Command-Control-Communications, Intelligence, Surveillance and Reconnaissance) mode.

It can operate not only from civil airports, but also from semi-prepared runways and airfields, under extreme temperature conditions, reaching the most inaccessible regions, from coastal to forests and mountainous areas.

- In operation in 16 countries
- 170,000 flight hours
- 10 mission configurations
- Reconfigurable in <30 minutes
- Operational in temperatures from -55° C to +50° C



# **JLTV - Beyond requirements Beyond expectations**



**MOBILITY**

**UNMATCHED CAPABILITIES**

- 20 in. (50.8 cm) wheel travel
- 70% faster off-road performance
- Helicopter transportable
- Fixed-wing aircraft transportable
- Amphibious transportable

**PROTECTION**

**COMPREHENSIVE PROTECTION SYSTEM**

- Patented blast protected seats
- Automatic fire protection system
- Proven scalable crew protection system

**PERFORMANCE**

**VEHICLE SYSTEMS & TECHNOLOGIES**

- Fully integrated C4ISR capabilities
- 5,100 lbs. (2313 kg) payload (2-door)
- 3,500 lbs. (1587.5 kg) payload (4-door)

© **DBDC LTD/ Oshkosh JLTV in BSDA 2022**

Featuring unprecedented performance with the patented TAK-4iTM intelligent independent suspension system, the Oshkosh JLTV quickly adjusts to achieve diverse transportability needs—by air (CH-47 and CH-53 helicopters' C-130, C-5, C-17 and A400 Cargo fixed-wing aircraft), land and sea. And it's ready on arrival, giving troops the reliability and performance needed for harsh battlefield environments

The JLTV achieves the level of protected mobility required to improve survivability in missions today and tomorrow with scalable crew protection installed or removed in the field.

Purpose-built with plug and play access for the complete range of modern battlefield technologies and aftermarket kits, the JLTV keeps forces connected. And it's easy to upgrade as technologies and missions evolve.

## JLTV Variants

- **General Purpose (GP)**



© Oshkosh Defense

The Oshkosh Defense Joint Light Tactical Vehicle (JLTV) is designed for never-before-achieved speed, power and protected mobility outside the wire. From its patented TAK-4i™ intelligent independent suspension system to scalable levels of protection and complete plug and play C4ISR capability—Oshkosh JLTV is the go-anywhere, do-anything light tactical vehicle.

- **Heavy Guns Carrier (HGC)**



© Oshkosh Defense

With a multitude of manned and remotely operated weapon configurations, the Oshkosh Defense® JLTV Heavy Guns Carrier (HGC) can pack a lethal punch. This vehicle is designed for crew-served and remote weapon systems. With a protected gun mount, it is the principal light vehicle for over-watch and direct fire support of infantry maneuvers, convoy escort and security missions. Advanced non-kinetic weapon systems (e.g., lasers) can also be integrated to defend against swarming UAV threats.

Its unrivaled TAK-4i™ intelligent independent suspension system provides unimpeded mobility across the most treacherous terrain. Scalable protection allows the Oshkosh JLTV to adapt to ever-evolving threats. And complete plug and play

C4ISR capability ensures the JLTV remains on the leading edge of mission technologies.

- **Utility (UTL)**



© Oshkosh Defense

The Oshkosh Defense® Joint Light Tactical Vehicle (JLTV) Utility (UTL) is built to haul cargo or shelters like no light tactical vehicle before it—with speed, power and protected mobility outside the wire. Its patented TAK-4i™ intelligent independent suspension system enables crews to go over and above the harshest terrain. Scalable protection allows it to adapt to ever-evolving threats. And complete plug and play C4ISR capability ensures the Oshkosh JLTV remains on the leading edge of mission technologies.

- **Close Combat Weapons Carrier (CCWC)**



© Oshkosh Defense

Delivering the capacity to haul a wide range of cargo for today's ever-changing missions, the Oshkosh Defense Joint Light Tactical Vehicle (JLTV) Close Combat Weapons Carrier (CCWC) is designed for never-before-achieved speed, power and protected mobility outside the wire.

Featuring the patented TAK-4i™ intelligent independent suspension system, scalable levels of protection and complete plug and play C4ISR capability the Oshkosh JLTV is the go-anywhere, do-anything light tactical vehicle.

# Northrop Grumman Advances F-16 Electronic Warfare Suite Integration

The US Air Force took another step in the effort to modernize the electronic warfare (EW) capabilities of the F-16 fleet. On March 10, in advance of a multi-million-dollar contract modification award expected later this year, the Fighters and Advanced Aircraft Directorate issued an Unpriced Change Order (UCO) modification to Northrop Grumman for the F-16 Integrated Viper Electronic Warfare Suite (IVEWS).

The UCO follows a \$40 million Other Transaction Agreement (OTA) modification award the company received in June 2021 to develop an IVEWS environmentally and safety of flight certified prototype.

Over the next 18 months, Northrop Grumman will complete IVEWS – also referred to as AN/ALQ-257 – development and install the system on several F-16s for flight testing. Additional development, integration, hardware qualification testing, and Engineering and Manufacturing Development (EMD) asset procurement will support the IVEWS Developmental Test/Operational Test (DT/OT) and Operational Assessment (OA) in early 2023.

“This contract and overall program effort is vital to increase the protection of our F-16 operators as they execute their missions in contested environments,” said Maj. Charles Prichard, Chief of Electronic Warfare Integration within the directorate’s F-16 System Program Office. “In order for the F-16 Viper to meet assigned mission sets in line with the CSAF’s Fighter Roadmap and operate in certain environments, the fleet needs an advanced electronic warfare (EW) system. IVEWS lines up with HAF/ACC’s EW plan and recently became the solution that improves the F-16’s survivability and lethality against current and emerging threats.”

IVEWS provides a next generation EW system that is internal to the F-16 and interoperable with the on-board APG-83 Active Electronically Scanned Array (AESA) radar. It is designed to Open Missions Systems requirements and provisioned for long-term growth capability to support future upgrades such as the Fiber Optic Tow Decoy, Adaptive/Cognitive Processing, and Open System Architecture compliance.

A key part of the effort has been the use of the Middle Tier of Acquisition (MTA) approach which

leveraged competition between defense companies to realize significant cost and schedule savings without sacrificing capability. This allowed the Air Force to strategically select IVEWS as the advanced fleet EW solution for the F-16.

“MTA is a pathway that really cuts out all of the red tape and allows you to go faster and cheaper without sacrificing capability,” Prichard said. “The competition [it promotes] is healthy because it creates incentives and allows industry to try to solve a problem for you and get advanced capability to the warfighter as quickly as possible.”

“IVEWS had a fantastic year, moving from lab prototype to flight demonstration,” added Col. Tim Bailey, F-16 System Program Manager. “It has become Air Combat Command’s F-16 advanced fleet solution and a ‘must have,’ top priority program. “IVEWS will keep the Viper relevant and lethal throughout its extended service life. We are thankful for the unique and collaborative partnership with Northrop Grumman and other stakeholders who continue to accelerate and solve the most complex problems our warfighters face.”

“We continue the process of putting IVEWS through a rigorous testing program to ensure that it will be ready to protect warfighters,” said James Conroy, vice president, navigation, targeting and survivability, Northrop Grumman. “As advanced radio frequency threats proliferate, the capabilities IVEWS will provide are critical for the fourth-generation fighter fleet.”

Northrop Grumman is preparing IVEWS for a series of hardware and software verification tests leading up to F-16 flights planned for later in 2022. The company will also continue development of the infrastructure needed to move the system to production once testing is complete.

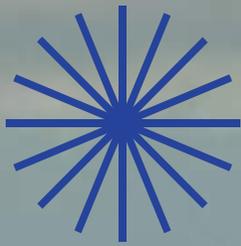
In 2021, the company’s IVEWS and AN/APG-83 SABR radar demonstrated pulse-to-pulse interoperability at the Northern Lightning joint exercise, operating against a range of airborne and ground-based threats.

IVEWS leverages an open-systems, ultra-wideband architecture, providing the instantaneous bandwidth needed to defeat modern threats. This F-16 system is part of a mature product line of electronic warfare capabilities that can be adapted to virtually any platform.

Northrop Grumman is a technology company, focused on global security and human discovery. Our pioneering solutions equip our customers with capabilities they need to connect, advance and protect the U.S. and its allies. Driven by a shared purpose to solve our customers’ toughest problems, our 90,000 employees define possible every day.

The production and fielding of IVEWS is expected to begin in 2024.

Proud to host NATO Naval Armaments Group (NNAG)  
annual heads of delegations meeting



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- \* *Understanding Hellenic Procurement Processes*
- \* *The Digital Ocean/Domain Awareness (from sea-bed to space)*
- \* *Immigration: Policies, procedures, operations*

After a Covid-19 induced hiatus, MAST's sixteen year anniversary is noted by eager anticipation, of auspices of Hellenic Ministry of National Defence, hosting NATO's NNAG annual heads of delegations meeting, focused exhibits, and numerous networking functions: MAST's unique environment to discuss future maritime defence technologies and collaborations, and all at the foothills of The Acropolis, in central Athens.

MAST MED 2022 will be the most inclusive MAST event to date, with all registered attendees enjoying complimentary coffee breaks together, and lunches and the annual party

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MISSILE SYSTEMS

## **SCORPION PROGRAMME: GRIFFON AND JAGUAR ORDER UNDER 2019–25 MILITARY PROGRAMMING LAW AWARDED TO EBMR CONSORTIUM**

The French defence procurement agency (DGA) has awarded the order for conditional tranche 4 (TC4) of the SCORPION program to Nexter, Arqus and Thales, operating through the EBMR\* consortium.

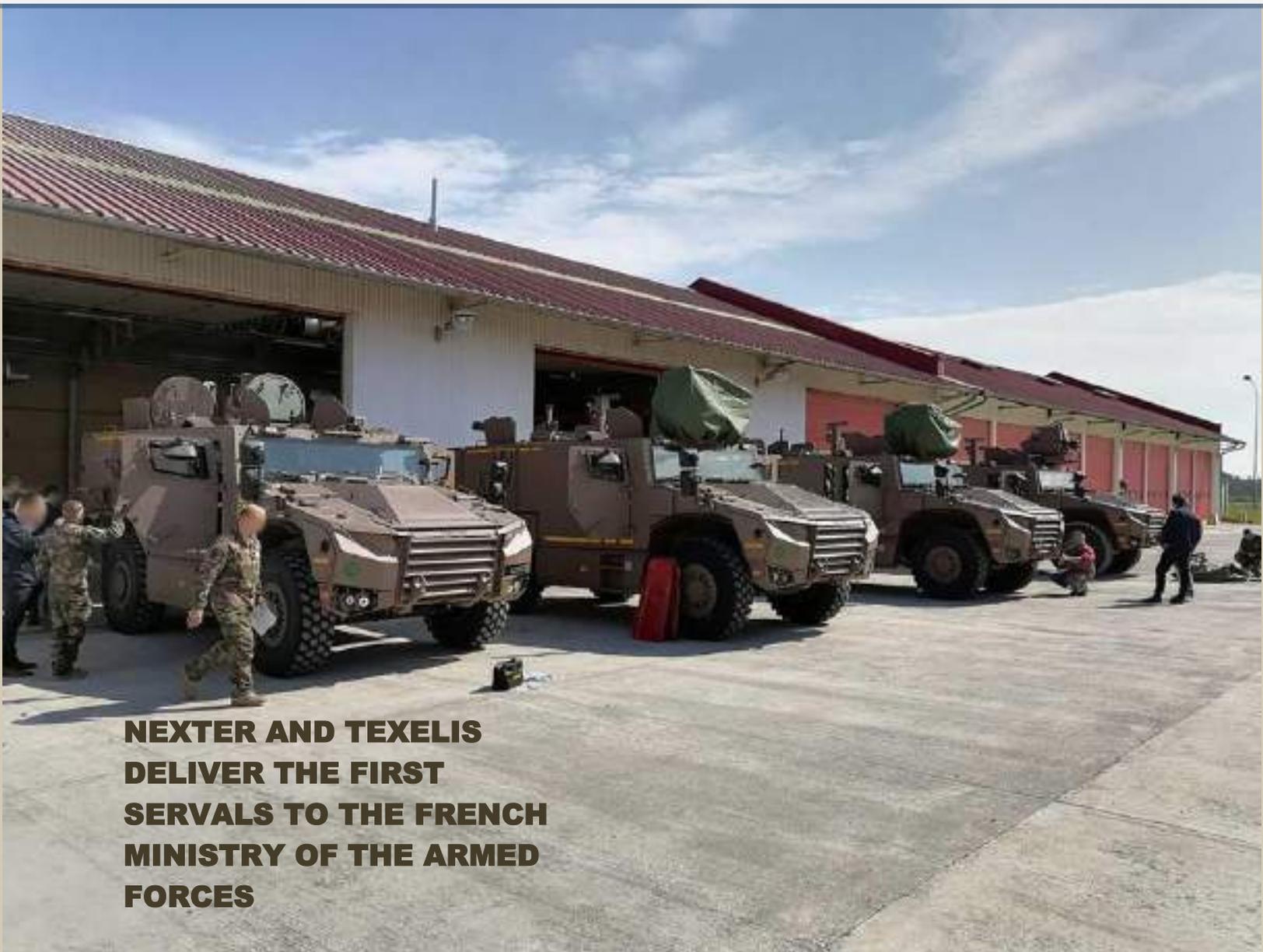
Tranche TC4 corresponds to an additional 88 JAGUAR armoured reconnaissance and fighting vehicles and 302 GRIFFON multirole armoured vehicles.

This new order will bring the number of JAGUAR and GRIFFON vehicles ordered to 150 and 909 respectively, in line with the target laid out in France's 2019–25 Military Programming Law. This represents half of the French government's total commitment for JAGUARS and GRIFFONS (excluding theme PAC variant) to be acquired under the SCORPION program to renew the medium-tonnage segment of the French Army's armoured vehicle fleet. The TC4 award comes shortly after an order was placed for 54 GRIFFONMEPAC versions,

which are equipped with a 120-mm mortar, with deliveries scheduled from 2024.

These two awards were announced by the French Prime Minister during his visit to Nexter's Roanne site on 19 February. This latest order underscores France's continuing confidence in the EBMR consortium partners, which have been ensuring on-time deliveries since the beginning of the program. It provides Nexter, Arqus and Thales, as well as the entire land defence industrial and technological base in France, with better visibility of their industrial activity through to 2025.





## **NEXTER AND TEXELIS DELIVER THE FIRST SERVALS TO THE FRENCH MINISTRY OF THE ARMED FORCES**

In accordance with the contract notified in 2018, the temporary business venture comprising Nexter and Texelis has delivered the first SERVAs light multi-role armored vehicles (VBMR) to the French ministry of the Armed Forces. 70 vehicles will be delivered by the end of 2022, out of a total of 364 SERVAs ordered to date by the French Defence Procurement Agency (DGA).

Developed in record time, the SERVAL 4x4 armored vehicle is one of the four vehicles in the SCORPION program, designed to renew the French Army's medium weight armored vehicles. The SERVAL is going to equip the French national emergency echelon as it is made to intervene in contact zones in the initial phases of an operation.

It will also be used light infantry units such as mountain troops and parachute regiments. Its weight and size enable it to be easily deployed in external theaters of operations, since an A400M transport aircraft can carry two SERVAs in combat order. The SERVAL is an essential complement to the GRIFFON

armored personnel carrier and the JAGUAR armored reconnaissance and combat vehicle.

The SERVAL integrates the common equipment to SCORPION vehicles, in particular the vehicle's vetronics, a remotely operated turret, threat detectors, as well as the combat information system (SICS). With the SICS, the SERVAL is integrated into the SCORPION collaborative combat system, taking advantage of all the information enhanced by the digitization of the battle space.

Based on the common base developed by Nexter and Texelis, the SERVAL is available in three main versions (patrol, intelligence and reconnaissance, and communications relay), which are themselves available in a large number of variants.

The SERVAL's highly modular architecture enables it to evolve according to its customers' needs, offering them different capabilities from a single vehicle, which ensures optimal vehicle availability and maintenance costs for its users.

## Naval Group launches the second Gowind® corvette for the United Arab Emirates Navy

On May 13th 2022, Al Emarat, the second Gowind® corvette ordered by the United Arab Emirates (UAE) to Naval Group, has been launched in Lorient in presence of an official delegation from the United Arab Emirates Navy.

In 2019, the United Arab Emirates ordered two Gowind® corvettes to be built in France. The first corvette, Bani Yas, was launched in December 2021. The second one, Al Emarat, has been launched on May 13th in the Naval Group Lorient shipyard.

Naval Group, as a turn-key solution provider, will also train the UAE Navy's crew from the equipment level up to the operational level. Starting in France, this preparation will continue with team-building and practice on operational scenarios in every warfare area in the Gulf.

Stéphane Frémont, Director of Surface Ship Programs at Naval Group, said: "The launching of Gowind® Al Emarat is a major industrial and symbolic milestone, where the corvette reaches her natural environment. The two Bani Yas class vessels benefit from the modular design of the Gowind® family and are the perfect asset to help the UAE Navy meet the challenges of today and tomorrow thanks to the most advanced technologies."

Gowind® enjoys significant commercial success as 12 units have already been sold. Most of them are built locally through Transfer of Technology and partnerships with local industry, for example in Egypt where three units are now in service within the Egyptian Navy.

### Gowind®: designed for naval operations

Gowind® is Naval Group's response to 21st century security and defence challenges. It is a corvette-size multi-mission Surface Combatant offering capabilities in all areas. It is designed to perform the full spectrum of naval defence operations and maritime security roles, with the highest level of performance.

Sturdy, strongly equipped, highly manoeuvrable, Gowind® integrates, through Naval Group's SETIS® Combat Management System (CMS) and innovative structural solutions, the latest generation sensors and weapons. Designed to be used against air, naval or underwater threats from the initial steps of the engineering process, Gowind® is multipurpose by design.

Gowind® is a sea proven, enduring, stealth and highly survivable platform offering:

- high performance warfare capabilities integrated through the SETIS® CMS and an efficient and innovative Panoramic Sensors and Intelligence Module (PSIM);
- automated systems for user-friendly operations by an optimized crew;
- large and smart deployable assets (heavy helicopter, UAVs, RHIBs);
- growth potential driven by customer requirement and innovation.

### Technical features

- Overall hull length: 102 m
- Overall beam: 16 m
- Displacement: 2,800 t©



## MBDA AWARDED TWO CONTRACTS BY GREECE FOR NAVAL AND AIRCRAFT WEAPONRY

MBDA awarded two contracts by Greece for naval and aircraft weaponry strengthens its close relationship with Greece's armed forces with two contracts for armaments for the Hellenic Navy and Hellenic Air Force, signed on Thursday, 24 March 2022.

The contracts were signed by Admiral Aristeidis Alexopoulos, General Director for Defence Investments and Armaments of the Greek Ministry of National Defence, and Eric Béranger, CEO of MBDA at a meeting in Athens.

Eric Beranger said: "These new signatures continue our long-lasting relationship with Greece. The first customer of our Exocet missile in 1968, we have been working closely together ever since. These new contracts for two weapons packages for the navy and the air force demonstrate our mutual trust, which has been regularly renewed over the years."

The first contract will supply the ASTER 30 B1 area air defence and MM40 Exocet Block 3C anti-ship missiles for three Defence and Intervention Frigates (FDI HN) – plus an optional additional frigate.

The second contract will supply weaponry for six additional Rafale combat aircraft. This follows on from the contract signed in January 2021 for the weaponry for 18 Rafale aircraft. The additional six aircraft will be equipped with the same weapons package: the Meteor beyond visual range air-to-air missile, the SCALP cruise missile, the MICA multi-mission air-to-air missile, and the AM39 Exocet anti-ship missile.

Companies in the Greek defence industry will be involved in the realisation of these contracts, as well as in the missiles' follow-on support phase.



## Leonardo's first Search and Rescue Workshop highlights advancements in life- saving rotorcraft capabilities and technologies

On 29th April in Valletta, Malta, Leonardo completed its first Search and Rescue (SAR) Workshop. The event ran from 26th-29th April and gathered international operators, industry representatives, and institutions to highlight advancements in life-saving rotorcraft capabilities and technologies. The SAR Workshop was deemed a major success by guests and contributors. The Workshop was attended by around 90 participants from 11 countries in the Mediterranean area, and included 12 helicopters operators and six partners. Five aircraft comprising of Italian and Maltese operators (including AW139/AW139M and AW101 types) were on static display and conducted demos. The main focus was on SAR operational experience and requirements in the Mediterranean Sea, in particular the use of the AW139 helicopter. The Workshop paves the way for similar events in other geographies and for other platforms in the future. Several presentations by Leonardo Helicopters and operators illustrated procedures, aircraft and fleet performance, new solutions in addition to a description of major missions carried out and

accomplished in demanding conditions. Activities included rear crew demos on real aircraft on the ground illustrating hoisting procedures with the relevant equipment and hoisting operations in a virtual reality environment. This activity replicated various basic and challenging/emergency scenarios in high fidelity – with the brand new and recently launched MITHOS (Modular Interactive Trainer for Helicopter OperatorS). MITHOS is a fully immersive and interactive operational training system for hoist operators, pilots, rescuers and medical operators. Leveraging on the latest state-of-the-art augmented reality, it reproduces realistic helicopter hoist operations and all type of rescue scenarios for hoist operators, rescuers, passengers as well as pilot training in all-weather conditions ensuring a realistic, effective and eco-friendly training. The event allowed a fruitful exchange of views and best practices, as well as updates on coordination of SAR assets (rotary and fixed wing, boats/vessels), mission efficiency and effectiveness improvement possibilities, hoisting techniques and crew communications, SAR equipment and kits, mission console, sensors, NVG, introduction of uncrewed systems, and training services and devices. With more than 1,100 units in service with more than 280 customers in around 90 nations and over 3.3 million flight hours logged to date since its certification in 2004, the AW139 has proven extremely successful for rescue and emergency missions. Almost 400 aircraft from military, parapublic and civil operators carry out emergency and disaster relief operations worldwide and have amassed more than 900,000 flight hours to date. With a unique combination of best-in-class performance and cabin space, latest safety and certification standards (even exceeded in some cases), advanced navigation and mission avionics/technology and impressive versatility and high customisation level (with over 1,000 kits certified for all applications) have strongly contributed to this life- saving mission capability of the AW139. The latest technology introduced for the task, include, among others, Mobile Phone Detection and Localization System, augmented reality on mission console, internet on board. The AW139 capabilities are also strongly supported by dedicated support and training services and a large network of service solutions allowing proximity and missions effectiveness.

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## **Leonardo and the Italian Secretariat General of Defence/National Armaments Directorate sign the C-27J Acquisition Contract for Slovenia**

The Acquisition Contract was signed in the framework of the Italy-Slovenia G2G Agreement aimed at reinforcing the bilateral collaboration between the two countries.

Leonardo and the Directorate for Air Armaments and Airworthiness of the Italian Secretariat General of Defence/National Armaments Directorate signed yesterday the Acquisition Contract for the supply of one C-27J to the Slovenian Ministry of Defence, additional equipment for aero-medical operations, training services and integrated logistic support for two years.

The contract follows the framework of the Italy-Slovenia Government-to-Government (G2G) Agreement signed by the Italian Minister of Defence, Lorenzo Guerini, and the Slovenian Minister of Defence, Matej Tonin, on 17 November 2021, and it is aimed at reinforcing the bilateral collaboration between the two countries.

Lucio Valerio Cioffi, General Manager of Leonardo, said: "We welcome the completion of the contractual phase of the G2G initiative between Italy and Slovenia with this latest step. The C-27J Spartan is the most effective solution to meet the stringent requirement set by the collaboration between the two governments."

Deployed in the most challenging geographic, environmental and operating conditions, Leonardo's C-27J Spartan is an aircraft capable of performing a vast range of defence and civil protection missions.

Extensive experience gained in operations with different air forces worldwide makes it the ideal aircraft for military transport missions, airdrops of paratroopers and materials, 'last mile' tactical troop support, special forces operations, humanitarian assistance, medical evacuation and disaster relief.

The Spartan embodies the very essence of the national security concept, proving the ideal solution for defence force operations and making a vital contribution to population support and civil protection tasks. In a world impacted by the Covid-19 pandemic and many other emergencies, the Spartan has proved able to deliver effective and sustained support to communities in need.

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## Homeland Security- HENSOLDT expertise in service of security

The security requirements of law enforcement services vary enormously, according to the threat and physical situation. Some peaceful borders just require regular, tuned to threat monitoring, whilst others demand intensive surveillance, with intervention a regular occurrence.

HENSOLDT's military accredited and vast sensor portfolio allows for the creation of flexible, scalable systems, tough enough to meet the demands of any border, immigration or security services requirement.

- **Border Surveillance**

The forces tasked to monitor vast frontiers need powerful, long-range sensors and optics to detect conspicuous activities and spot informative details from afar. HENSOLDT's security solutions are well-suited for monitoring land and sea borders. They can be adjusted to the specific tasks and are interconnected and offer a complete, modular surveillance suite which consists of optronic and radar sensors as well as the hard- and software for surveillance headquarters. In these headquarters all the information is bundled so that the security or military forces on site can monitor hundreds of kilometers of border concurrently.

- **Wildlife Protection**

HENSOLDT leads the way in wildlife protection. Is specialized in the ability to supply custom made solutions according to the environment that they must protect, ranging from dense forests or riverbeds to flat wastelands and deserts. Drawing on our experience of military surveillance systems, HENSOLDT can supply a full concept of operation including support with reaction tactics.

With a long-established history and expert technical knowledge, HENSOLDT ensure that clients understand the cost of ownership related to long-term system operation and maintenance. HENSOLDT systems focus on reducing manpower requirements as well as minimizing the human risk factor as it has been installed in South Africa, to protect the precious wildlife from poaching criminals.

- **Immigration and Fishery Protection**

Coastal areas are extremely difficult to monitor. For one because of the huge amount of different shaped objects to distinguish from small, fast boats up to heavy, slow tankers. For another because of the weather conditions with haze and fog which can impact viewing distances dramatically. HENSOLDT therefore offers powerful sensors and high-end C2 software for surveillance applications in coastal areas. HENSOLDT's cameras with long-range surveillance capabilities can spot boats at distances of 20 or even 30 kilometres and they are robust enough to easily withstand coastal climatic conditions.

In addition, HENSOLDT's radars are capable of decluttering the clutter and give precise information about the range, angle and velocity of objects. With automated detection, tracking and identification capabilities our security solutions make it easy to surveillance coastal areas.

- **Detecting Espionage and Covert Activities**

Covert operations to gather intelligence are becoming increasingly frequent. Especially newly available technology makes it easier to gather insights – be it by drone which can easily infiltrate protected areas, take pictures and be used as listening device or be it on the electromagnetic spectrum by intercepting communication signals.

Therefore, it is important for military forces but also for businesses and government institutions to protect themselves from such activities. HENSOLDT offers solutions to counter UAV intrusions as well as devices to monitor the electromagnetic spectrum preventing interception.



## URANO, a project for including drones in Italy's national air traffic management system



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URANO is a research project funded by the Italian Space Agency with the technical assistance of ENAV, implemented by Telespazio in partnership with Leonardo

Guaranteeing adequate safety standards and the utmost precision at every stage in flight with satellite navigation systems, particularly Galileo, RPAS (Remotely Piloted Aircraft Systems) and UAS (Unmanned Aircraft Systems), integrated into Italy's national ATM - Air Traffic Management system.

This is the goal of the URANO research project (the name stands for Uas/Rpas integrAti Nel sistema ATM NaziOnale, meaning UAS/RPAS integrated in the national ATM system), presented today at the airport in Grottaglie (Taranto), funded by the Italian Space Agency (ASI) with the technical support of ENAV and created by Telespazio - a joint venture of Leonardo (67%) and Thales (33%) - in collaboration with Leonardo.

The project, now in the test flight phase, is intended to promote inclusion in Italy's national air traffic control system, through use of GNSS systems such as GPS, EGNOS and Galileo, of remote piloted aircraft with a weight of more than 150 kg upon take-off for use in civil operations.

Telespazio and Leonardo, with the support of partners Planetek and Distretto Tecnologico Aerospaziale (DTA), conducted the research

through design, development, verification and validation of a prototype system for experimenting with and demonstrating the benefits of use of satellite navigation systems for drone missions integrated into the ATM system. ENAV participated in the project by offering the necessary support, monitoring and technical revision of operations.

Flight tests were conducted with Leonardo's remote-controlled SW-4 Solo helicopter. The multirole manned/remote piloted demonstration craft permitted development and customisation of instruments such as the Virtual Cockpit, an interface which may be used to monitor GNSS performance during drone operations; the GNSS Monitoring Tool, used to monitor the performance of navigation systems in geographic areas of interest; and integration of signals from the drone and GNSS parameters directly on the platform used for air traffic control operations. The test flights and solutions identified were developed and tested in Grottaglie-Taranto airport.

As part of the project, a prototype demonstrator was developed on the basis of a GNSS system in a double constellation configuration capable of exploiting the features of the GPS/EGNOS system and the upgrade in the performance of Galileo, the European satellite navigation system. The results obtained reveal that GPS/EGNOS and Galileo are of key importance for guaranteeing levels of safety appropriate for the services that can be developed using the craft.

Marco Brancati, Head of Innovation and Technological Governance at Telespazio, comments: "The test results reveal the value of the prototype demonstrator's performance, both in the configuration using GPS/EGNOS and with Galileo. The results clearly reveal how use of the constellations, in the multi-constellation configuration, improve the performance and level of integrity of positioning data, ensuring a sufficient level of safety in line with the requirements of the mission and of operations".

"Leonardo's experience in air traffic control and ability to design and develop remote piloted systems allow the company to contribute highly advanced technology and innovation to the URANO project," notes Laurent Sissmann, Senior Vice President of Unmanned Systems at Leonardo. "With our systems, which are evolving thanks to introduction of new enabling technologies such as Artificial Intelligence and Big Data, we can come up with new solutions responding to the challenge of integrating drones into civil airspace".

## BSDA 2022 post show report

The 8th edition of Black Sea Defense and Aerospace – BSDA 2022, the largest exhibition of military, aeronautical and security equipment in Eastern Europe, took place from 18 to 20 May 2022, in Bucharest, at Romaero Băneasa. Over 380 companies from the world defense, aeronautics and security industry, from 32 countries, presented their latest products and services. Among the participating countries, the United States has the most significant presence at the event, followed by Germany, France, Israel and Italy and Greece with most of the major companies, including Lockheed Martin, Ohskosh Defence, Raytheon Technologies, General Dynamics, BAE Systems, L3Harris, Leonardo, Elbit Systems, Rafael Advanced Defense Systems, Naval Group, MBDA, IDE, Airbus, Arqus, DAMEN, IVECO Defense Vehicles, Beretta, but also Romanian companies as Dacia Automobile, Romarm, Romaero, IAR Braşov, Aerostar Bacău, Pro Optica, BlueSpace Technology and others.

Leonardo showcased in Bucharest the technologies and solutions developed in the aeronautical, electronic, helicopter and space fields to meet the needs of governments, institutions, armed forces and homeland security operators in the Balkan area.

Among its aircraft programs, Leonardo's highlighted at the show is the C-27J Spartan Next Generation in an ISR (Intelligence, Reconnaissance, Surveillance) configuration, being pitched for evolving requirements for complex, multi-domain scenarios. Proven in service with sixteen operators at all latitude and in particular with the Romanian Air Force, in its Next Generation variant the aircraft offers a more advanced avionic suite and systems, enhanced aerodynamics and, in its ISR configuration, new roll-on/roll-off sensors and equipment including AESA surveillance radar, Electro-Optical/Infra- Red (EO/IR) system and Electronic Support Measure (ESM) for ISR and SIGINT/ELINT missions. For Electronic Warfare missions (counter-radio controlled IED, electronic attack, comms, intel ops broadcast) a dedicated suite can be added. The Mission System, also developed by Leonardo and based on palletized, quickly removable equipment, manages the installed sensors, analyzes the information gathered and performs true data fusion, providing operators and pilots with a detailed, real-time tactical picture.

As a world leader in advanced training systems and technologies thanks to its M-345 and M-346 jet aircraft and their Integrated Training System, Leonardo can cover the full pilot training syllabus and improve the operational skills of any modern Air Force. The world-leading twin-engine M-346 covers the latest generation of advanced/Lead into Fighter



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Training (LIFT) phases of pilot training while the new, single engine M-345 jet was designed as the optimal solution for a pilot's basic to advanced training. Leonardo's technology leadership is also underlined by the International Flight Training School (IFTS) initiative: IFTS is the result of a strategic collaboration between the Italian Air Force and Leonardo to establish a global centre of excellence for advanced military pilot training in Italy: it has already been chosen by the air forces of Qatar, Germany and Japan.

Romania has several medium to long-term requirements in the helicopter sector for both defence and security duties. This includes multirole platforms for both land and naval applications, combat helicopters and law enforcement aircraft. The AW149 (or alternatively the AW139M) represents an ideal and modern solution to meet both land and naval multi-mission needs thanks to its inherent versatility and high level of customizability. Meanwhile, the most advanced

ASW/ASuW helicopter in its category available in the market today, the AW159, is being offered to strengthen anti-submarine and anti-surface warfare capabilities in the Black Sea for either land or ship-based operations. Romania is also considering new combat helicopters: the latest-generation AW249 combat helicopter would provide unprecedented technology, performance and supportability to face present and future battlefield scenarios, including the potential for industrial collaboration. In the longer term, the AW109 light twin, extremely popular among homeland security operators worldwide, is well positioned to respond to new requirements for law enforcement helicopters in the country, thanks to superior performance, cabin flexibility, modern tailored solutions and kits.

In airborne technologies, Leonardo is proposing its Mode 5 identification friend/foe M428 IFF compact transponder to the Romanian market, helping allied

forces to distinguish potential threats and safely cooperate in multi-domain coalition operations. More than 1,000 M428 IFF transponders have been already sold worldwide and today they are in use on air platforms as well as on land and in the naval domain.

To meet Romania's border patrol requirements, Leonardo is offering its Falco EVO UAS (Uncrewed Aerial System). The drone is designed for tactical ISR (Intelligence, Surveillance and Reconnaissance) roles and has a number of characteristics that make it an ideal tool for such missions, monitoring large areas of land and sea and enabling timely, targeted interventions.

As a naval Combat Management System integrator, Leonardo provides command, control and communication systems, radars, other sensors and naval defence systems including the Vulcano 76mm ammunition for the naval domain, part of the latest generation of the Vulcano family, available in both unguided and the guided variants (BER - Ballistic

Extended Range; GLR - Guided Long Range). The family also includes Vulcano 127mm ammunition and, for land applications, 155mm, able to reach a range of up to 70 km.

Another key technology being promoted to Romania is GEM Elettronica's coastal surveillance radar. Leonardo has recently acquired a 30% stake of share capital in GEM Elettronica, to strengthen its position in the naval sector.

**Oshkosh Defense, LLC**, an Oshkosh Corporation company, displayed a Joint Light Tactical Vehicle (JLTV) and a JLTV trailer (JLTV-T) as part of Oshkosh Defense booth.

The 4-door Heavy Guns Carrier (HGC) JLTV was fully outfitted with the Elbit 12.7mm Overhead Remote-Controlled Weapons Station, Beth El CBRN (Chemical, Biological, Radiological, Nuclear) collective protection system, WisPr intercom and GenAirCon systems by IDE and Genasys Long Range Acoustic Device – LRAD-450XL. The JLTV-T also has an IDE HGT20K30 hybrid generator.

Oshkosh Defense has over a decade of proprietary experience in designing, building, and delivering the JLTV, which provides unprecedented levels of off-road mobility, survivability, and hosted firepower on a light tactical vehicle platform. International interest in the Oshkosh Defense JLTV continues to grow, with orders or commitments from several NATO,

Allied, and Coalition partners, including Belgium, Montenegro, Slovenia, Lithuania, Brazil, Romania,



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and North Macedonia. To date, Oshkosh has built over 16,000 JLTVs for the U.S. military and its allies.

“Oshkosh Defense is proud to support NATO allies that are looking to modernize their Armed Forces and protect their soldiers,” said John Lazar, Vice President and General Manager, International Programs, Oshkosh Defense. “As international interest in the JLTV continues to grow, we will work with our network of industry partners that contribute their own best-in-class expertise. Together, we provide a tailored JLTV solution that is designed to defeat emerging threats with flexibility and room for growth to accommodate evolving mission requirements.”

Among recent international milestones:

Oshkosh Defense received a \$152 million order to supply JLTVs to U.S. military and NATO allies Lithuania, North Macedonia, Slovenia and Romania

Both the Lithuania's Armed Forces and the Slovenian Minister of Defense held JLTV acceptance ceremonies last year

Oshkosh Defense and Rafael Advanced Defense Systems Ltd. successfully demonstrated a live-fire of a Spike NLOS missile from a JLTV at a demonstration hosted by the Estonian Navy

Oshkosh Defense and Elbit Land Systems successfully demonstrated a live fire of Spear 120mm low recoil mortar on a JLTV Mortar variant during a multinational demonstration hosted in Israel on March 29, 2022.



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**Elbit Systems** presented a comprehensive range of UAS – from the man-portable Skylark™ LEX mini UAS, through the versatile tactical UAS and up to

the next-generation Hermes™ 900 medium altitude long endurance (MALE) UAS.

The design of our UAS is based on decades of operational experience, and the systems are in service with numerous military and security forces worldwide. The UAS are the backbone of the Israel Defense Forces (IDF) UAS force. Elbit Systems' extensive experience and innovative approach to all aspects of UAS development, production, fielding and support result in outstanding UAS performance and highly effective operational yields around the globe.

Elbit Systems' SKYTOUCH is an end-to-end, multifunctional Planning, Command and Control solution that gathers and analyzes vast amounts of data from various sources, to create a complete and accurate aerial Common Operational Picture (COP). Command An advanced multi-touch system with a table-like interface, By creating a comprehensive COP that can be distributed throughout a decentralized network, which unifies and displays all data, readiness status and other SKYTOUCH allows the entire chain of command to enforce strict aerial defense, increase data sources atop 3D maps, SKYTOUCH Command provides threat-detection probability and enable optimal real-time operational response. SKYTOUCH complete operational command capabilities, in real time. supports high command by allowing it to manage all forces, in the air and on the ground, with the touch of a nger. Supporting a Network Centric Warfare (NCW) approach, SKYTOUCH Command allows high command to mark routes, view, identify and classify targets, allocate missions, perform A robust solution, the SKYTOUCH network maintains its resilience through a smart cloudreal-time interception planning, measure distances and more. based architecture, utilizing the latest technologies to achieve maximum network efficiency and redundancy.

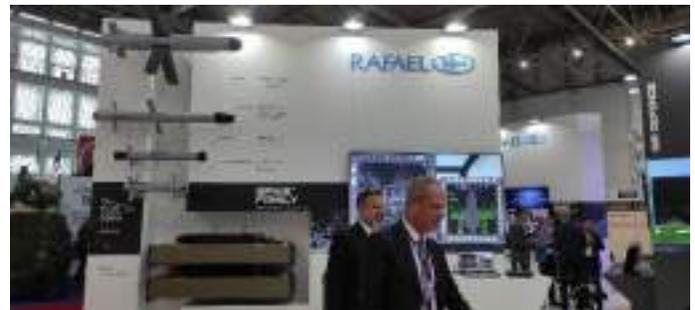


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**Naval Group** showcased at BSDA its Gowind® 2500, a multi-mission corvette designed for combat and its equipment. In July 2019, the Romanian government awarded a contract to Naval Group to build four Gowind corvettes for the Black Sea nation in a deal worth €1.2 billion (U.S. \$1.4 billion). The contract also includes modernizing the country's two

T-22 frigates and construction of a maintenance and training center. Local yard Santierul Naval Constanta partnered with Naval Group for the bid.

The platform is sea-proven and combines unrivalled stealth features, resilience and high availability with outstanding anti-air (AW), anti-surface (ASW) and anti-submarine warfare (ASuW) performance thanks to the MU90 and to the CANTO®-V. The MU90 is the sole totally new lightweight torpedo in the world. Designed and built with the most advanced technology, it is capable to counter any type of nuclear or conventional submarine even acoustically coated, deep diving, fast evasive, deploying anti-torpedo effectors or bottomed in littoral areas. The CANTO®-V represents a breakthrough in the field of anti-torpedo defence. Based on dilution/confusion concept, it is the only solution capable of protecting surface vessels against both the most advanced and the previous generation torpedoes. The Gowind® 2500 is operated with the SETIS®. This state-of-the-art combat is combat proven on the French Navy's FREMM frigates and interoperable with NATO systems. It provides the operator with the best management and decision-making aids, ensuring the Gowind® 2500 supremacy over conventional



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**Rafael** presented a number of NATO incorporated systems that have proven their capabilities in the modern battlefield and bolstered the defense capabilities of the company's European partners. The SPYDER Air Defense System incorporates an open architecture which is currently being integrated, under the Czech Republic contract, into the NATO Air Defense Command and Control and Communications. The SPYDER is supported by the

connectivity provided by RAFAEL's advanced BNET Communication Network. Another NATO incorporated system being exhibited is the renowned SPIKE Missile Family which has been incorporated into the military services of 39 nations worldwide including 19 NATO member states. SPIKE is being manufactured on European soil, and through EuroSpike GmbH may be procured by NATO member states through OCCAR. Highlighting RAFAEL's advanced aerial solutions is the RECCELITE digital reconnaissance pod which is also in use amongst NATO partners.

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