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# ARABIAN DEFENCE

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Defence , Aerospace, Homeland Security News

## IAI to showcase Leading Systems at AUSA 2023





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World Defense Show 2024 is your destination to connect, collaborate and network with industry leaders and shape the future of security and defense. Get equipped for tomorrow and take part in this unmissable show.

**VISITOR REGISTRATION OPENS SOON**

## Indra and Navantia Join Forces to Develop and Market Digital Defence Systems



- Indra and Navantia have entered into a collaboration agreement to combine their respective capabilities and generate a joint offering to enhance the standing of Spanish industry in the international market and increase its autonomy in technology.
- The agreement will be a boost to industry in general and strengthen Spain's defence and technology ecosystem and better position them in European Defence.

Spanish companies Navantia and Indra have entered into a collaboration agreement to jointly develop and commercialize digital systems and solutions in Defence and Security. The companies expect this initiative to enhance their export capacity and better position them in European Defence.

At a ceremony at the headquarters of the Center for National Defence Studies (CESEDEN), the agreement was signed by Indra's Chairman, Marc Murtra, and its CEO, José Vicente de los Mozos, and by Ricardo Domínguez, Navantia's Chairman, and Donato Martínez, its Director of Systems and Services and Director of

Technology and Digital Transformation.

Navantia and Indra will jointly explore opportunities to increase Spain's autonomy in technology and its international profile in new digital solutions and naval and non-naval systems. The companies will cooperate in naval systems, particularly combat systems, and in land-based systems to participate in programs such as 2035 Brigade, BLET (Logistics Base of the Spanish Army) and MC3 (Modernization of the Command, Control and Communications Systems).

The agreement will also enable the companies to channel their respective lines of investment and development on a joint



basis to optimize their market position. The agreement will create mechanisms to enable Navantia and Indra to work together on differential solutions in areas such as the combat cloud, digital twins, smart logistics, force maintenance 4.0, cybersecurity, cyberdefence, advanced simulation environments and new enabling technologies.

"This agreement represents the joint commitment of the two largest Spanish defence companies to provide our Armed Forces with the advantage and autonomy in technology they need and enhance the standing of Spanish industry in demanding international markets. Navantia is committed to working with different companies to boost Spanish industry and place us at the leading edge of technology", declared Navantia's chairman, Ricardo Domínguez.

"The defence ecosystem needs to lead and harness the potential of disruptive technologies. Navantia and Indra are leaders in the field and this agreement will allow us to accelerate and optimize development and offer cutting-edge solutions to our customers", stated Donato Martínez.

Indra's chairman, Marc Murtra said "this agreement embodies the path that Indra is seeking to follow to build a collaborative ecosystem with large Spanish companies such as Navantia, but also with smaller firms, including SMEs and startups, in order to exploit the full potential of Spain's technology industry. As a leading global technology and defence company, Indra is taking on this challenge that will open up huge opportunities for us, but also for the whole of Spain's industry and its innovative ecosystem".

"The bringing together of the capabilities of the two major Spanish defence companies, Navantia and Indra, is a unique moment and a first step for the industry in a new collaborative model that we must continue to advance. This new mode will enable us to maintain our autonomy in technology and compete in the international ecosystem. It is good for our Armed Forces, Spanish industry and Spain's standing in Europe", Indra CEO José Vicente de los Mozos stressed.



## EDEX to Showcase Cutting-Edge Innovations in Defense and Military Technologies



military officials and defense attachés from the embassies of participating countries, including: Algeria, Jordan, Kenya, Morocco, Nigeria, Saudi Arabia, South Africa, Turkey, United Arab Emirates and United States.

EDEX 2023 has secured high-level industry sponsors including Dassault Aviation, Hanwha, MBDA, Lockheed Martin, Boeing, Esri and Huawei, and will feature country pavilions from Armenia, Bosnia, Bulgaria, China, Czech Republic, Egypt, France, Germany, Greece, Italy, Pakistan, Romania, Saudi Arabia, South Korea, UAE, Ukraine and the USA.

Arabian World Events presented the key milestones of the previous editions of EDEX, along with plans and updates for the 2023 edition of the exhibition.

The event has been gaining considerable momentum, attracting a constantly growing number of exhibitors and visitors. The 2021 edition of EDEX witnessed the participation of 407 exhibitors from 42 countries, a notable increase from 376 exhibitors from 41 countries in 2018. EDEX 2021 saw the attendance of 78 official VIP delegations from 54 countries, and more than 30,000 visitors. Anticipated to surpass the size

and scale of previous editions, EDEX 2023 is expected to host more than 85 VIP delegations with 35 new countries and 111 total countries invited so far.

Thomas Gaunt, CEO of Arabian World Events, said: "Over the last two editions, EDEX has firmly established itself as a leading defense exhibition on both a regional and global level. We were delighted to host defense attachés and military officials at the recent reception to present to them our visions for EDEX 2023 and demonstrate the growth of the show. We are looking forward to welcoming all exhibitors and sponsors to Cairo on 4-7 December, and are eagerly anticipating more countries and industry pioneers than ever before."

Gaunt added: "With the full support of the Egyptian Ministry of Defense and the Ministry of Military Production, we aim to strengthen Egypt's position as a hub for world-class industry events with a special focus on military and defense technologies. We take pride in hosting over 400 leading defense and security companies from around the world who are set to showcase the latest military technology, equipment, and systems across land, sea, and air."

## Texelis celebrates outstanding partnership with Yugoimport at Partner 2023



At Partner 2023 in Belgrade, Texelis celebrates its outstanding, long-running partnership with Yugoimport on the Milosh and Lazar families of combat vehicles.

Rooted in long-term commitment, trust, technical excellence and close cooperation, that partnership is now embodied by several

the development process of these products, Texelis has been entrusted at the highest level with advising Yugoimport with mobility and general design ideas.

As of 2023, Texelis has equipped a serious quantity of Lazar 3 8x8 IFVs, with an ongoing order for T900 axles. Texelis has also equipped Milosh vehicles with its T700



hundred vehicles produced during the past 8 years.

Since 2015, Texelis has been involved in most vehicles developed by Yugoimport. The company was first selected to provide mobility elements for the Lazar 3 Infantry Fighting Vehicle (IFV). It was then selected to provide the axles for Milosh 4x4 multipurpose vehicle, which arguably offers the best balance on the 4x4 market between mobility, payload and protection. Building on the success of the Milosh, Yugoimport has recently launched the larger Milosh 2, which benefits from the Texelis' new generation T750 axles and technology for further increased payload, mobility and general transport capability. Throughout

axles. In total, Texelis has contributed to several hundreds of Yugoimport vehicles in what has been an exceptional partnership.

Milosh, Milosh 2 and Lazar 3 also have export potential, which could further increase existing fleets in the years to come.

That outstanding partnership with Yugoimport highlights Texelis as a major supplier for Yugoimport, the Serbian Army, but also as a reliable, high-quality supplier of military mobility solutions for Original Equipment Manufacturers (OEMs) worldwide.

In parallel, Texelis has developed new capabilities and now designs complete mobility solutions, integrated in first-rate systems such as the French Army's Serval 4x4 armoured personnel and systems carrier, developed, qualified and produced in partnership with French leading Defence company Nexter, a company of KNDS. These complete mobility solutions can now be offered to create new vehicles in the framework of strategic partnerships.

Texelis takes pride in the quality of the relationship it creates with its clients and suppliers, which are all regarded as highly trusted partners. That proximity means that Texelis constantly finds new ways of pushing programs forward to meet the partner's specific needs. Texelis delivers.

To better serve its partners, Texelis brings together the expertise of an actual "Team France", which further develops the long-running ties between France and Serbia.



## IAI to showcase Leading Systems at AUSA 2023



Israel Aerospace Industries (IAI), a world-class aerospace and defense company, will exhibit at the prestigious AUSA 2023 Annual Meeting & Exposition, taking place October 9-11th in Washington, DC. IAI's booth will showcase some of its leading systems such as the flagship Barak MX air and missile defense system, advanced technologies and solutions for future armored fighting vehicle, multi-mission unmanned land vehicle, REX MK II ground robotic systems and advanced sensors, unmanned aerial vehicle Heron MKII, Gunfire Detection System Othello P, and its leading loitering munition systems – Rotem, Roc X, Mini Harpy, and Harop – and more.

AUSA is the Army's premier professional association and host of the largest land power exposition in the United States. More than 33,000 people are expected to attend the upcoming event, including senior army leaders and top industry members. IAI will be announcing its newest system to address the battlefield of the future on

October 10th at 13:30 at its booth (Hall B, Booth 2825).

"IAI is proud to participate in AUSA and to continue pushing technological boundaries and creating cutting-edge solutions to today's defense needs," said IAI Chairman Amir Peretz. "We are proud to collaborate with partners in the US and around the world, and AUSA provides us with the opportunity to meet with our current partners and meet with potential ones as well."

"IAI is thrilled to participate in AUSA and to showcase our land products and solutions which are helping armies all around the world," said IAI CEO and President Boaz Levy. "We have a long history of supporting US defense initiatives and working closely with the US defense industry for the past 70 years. Our shared values of innovation, defense and economic development are the basis of our fruitful collaboration, and IAI is excited for the opportunity to create new partnerships and collaborations with local defense companies during AUSA."



## Orbit to integrate airborne terminals across Viasat's expanded Ka-band network

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The new cooperation agreement includes the Orbit MPT-30 (12") and MPT-46 (18") Ka-band product lines.

The newly integrated system will create a multi-constellation-capable set of terminals, which will operate over the Viasat Ka-band networks and the Global Xpress network, as well as other MEO constellation networks. This integrated solution will provide military and commercial end-users with ubiquitous access to the Ka-band

capacity, global coverage, and increased resiliency from both the Viasat and Global Xpress networks, delivering many of the advantages the newly combined company plans to bring to customers with broader network integration.

Dany Eshchar, CEO of Orbit Communications Systems, said, "Orbit is proud to cooperate with Viasat in order to provide comprehensive SATCOM solutions. The integrated solutions will provide customers with a market-leading, future-proof approach, as well as the dedication of the Viasat and Orbit teams to support these customers in the long-term. The airborne systems, developed by Orbit, are already installed and proven worldwide. Viasat and Orbit are taking a multi-phased approach to the integration of their respective technologies, to serve both the short-term and long-term needs of high requirement government users, worldwide. We expect this cooperation to serve additional customers of the two companies."

The Multi-Purpose Terminals (MPT) terminals fulfil the 'everywhere, all-the-time' coverage requirements of both military and commercial airborne users. They also allow government users to roam between commercial Ka-band and Mil-Ka services. These low size, low-weight and low-power (SWaP) user terminals can deliver up to 126 Mbps forward link and up to 29 Mbps return link on Mil-Ka HCX service while maintaining uninterrupted connectivity during all flight phases.



## HUNTeR with ZMU-03 makes its debut on the training ground

Military automation is not limited to unmanned aerial systems. It also includes robotic comrades-in-arms, moving on land side by side with soldiers. The sensors of land platforms collect information and expand situational awareness, but the overriding task of unmanned systems is to protect their lives. Such a solution is the PIAP HUNTeR robot with the AREX ZMU-03 unmanned turret, which debuted during the FEX experimental exercises at the Nowa Dęba training ground.



The Polish combat robot (in the reconnaissance version) made its debut in difficult training ground conditions during the Field Experimentation Exercises (FEX). For the first time, for over a week, soldiers had the opportunity to get to know and evaluate the possibilities of using an armed unmanned wheeled vehicle in various types of tactical situations.

The development of the PIAP HUNTeR robot with the ZMU-03 tower is the result of cooperation between the leaders of unmanned systems in Poland: the Łukasiewicz Research Network - PIAP

Industrial Automation and Measurement Institute and the AREX Automation and Measurement Devices Department (WB GROUP companies).

The unmanned platform was characterized by high off-road capability, surpassing armored personnel carriers in some situations. It accompanied rushed subunits in a difficult, sandy area. The robot with the AREX ZMU-03 remote weapon module was used to detect threats and provide fire support and smoke screens.

All tasks were carried out in real scenarios, with the active participation

of soldiers and combat vehicles being the equipment of the Polish Army. Experience from the FEX exercises can be used for the future implementation of unmanned land platforms in the "battalion of the future" concept being developed by the General Staff of the Polish Army.

FEX exercises are an invitation from the Polish Armed Forces to dialogue between military commanders and suppliers of the most modern, often futuristic solutions for the army. They also contribute to the improvement of products so that they meet the requirements of the modern battlefield even better.



## RTX connects new platforms to serve as battlefield nodes

RTX (NYSE:RTX) demonstrated advanced AI-enabled communications systems to rapidly distribute data to coalition partners during the second round of the U.S. Indo-Pacific Command's Northern Edge 2023 exercise series at Kadena Air Base in Okinawa, Japan.

Collins Aerospace, an RTX business, expanded upon the airborne, platform-agnostic data hotspot that the company debuted during the first Northern Edge exercise in Alaska earlier this year. Leveraging the company's cross domain solution, advanced AI-enabled communications, and intelligent gateway technology, Collins connected partners from The Five Eyes alliance and others to the data network, expanding joint force capabilities during the demonstration.

«This was a critical demonstration to prove our solutions can facilitate and enable connectivity for a large and growing joint force network,» said Elaine Bitonti, vice president, Connected Battlespace & Emerging Capabilities for Collins Aerospace.

«It's important to understand that the joint fires data our systems processed and distributed came from a large network of platforms that weren't originally designed to connect and share data like this,» Bitonti said. «Not only did our gateway and cross domain solution connect those platforms, they also automated the distribution of that data to the right partner at the right security level.»

RTX's Raytheon business unit contributed to accelerating decision-making timelines, with an integrated team demonstrating how AI-enabled machine-to-machine communications rapidly delivered threat awareness data from the U.S. Space Force's Unified Data Library to multiple aircraft, demonstrating how they can be used as connectivity nodes on the battlefield.

«Our automated communications powered by AI securely provided mission data to a number of platforms including C17s, C-130s and the KC-135 in a realistic combat scenario,» said Conn Doherty, vice president of Battle Management Command & Control

& Autonomy Solutions at Collins Aerospace. «Northern Edge TAC-2 has been a vital proving ground to demonstrate how enabling JADC2 technologies can strengthen the Joint Force and its allies and partners' readiness to fight and win.»

RTX's suite of technologies is flexible, allowing integration into a variety of platforms. The company's focus on open systems architecture development aims to support the evolving needs of the customer and the battlefield and its technologies enable synchronized operational capabilities available in every domain. Expanded connectivity to U.S. Air Force Mobility Command assets was facilitated through an ongoing Cooperative Research and Development Agreement between Collins Aerospace and the Utah Air National Guard. The agreement is focused on extending the utility and survivability of the KC-135 by expanding the role the KC-135 can play on the battlefield as an airborne refueling and connectivity

## MBDA : Successful firing of new generation Exocet missile from French frigate



A successful firing, by the French navy, of the latest generation of MBDA's Exocet missile – Mer-Mer 40 Block 3c (MM40 B3c) – took place from the multi-mission Alsace frigate (FREMM DA) off the coast of the DGA missile test centre (DGA EM) of Ile du Levant on 20 September 2023.

Exocet MM40 B3c is the latest generation of MBDA's Exocet family of anti-ship missiles for integration on a wide variety of platforms including surface ships, submarines, fast jets, helicopters and coastal batteries. Previous versions of Exocet are in service with several navies around the world.

The B3c generation builds on the successive improvements made to Exocet throughout its service. MM40 B3c includes all the characteristics for which Exocet is renowned, in particular its all-weather capability and high flexibility of use. In addition, this latest missile benefits from new seeker technology and the development of new algorithms designed to meet the latest operational requirements of anti-ship warfare.

MBDA CEO Eric Béranger said: "I am extremely proud of the success of this operational evaluation firing of the Exocet MM40 B3c, performed from the multi-mission Alsace frigate. It proves the new capabilities of the missile's latest generation, whose major developments keep it at the forefront in a high-intensity context. Exocet is a real symbol for MBDA, and this success is further proof of the skill and technical excellence of MBDA's people. I would also like to thank the DGA and French navy for this firing."

MBDA has continued to develop Exocet since it entered service. This has enabled the missile to adapt to new battlefield conditions while maintaining its exceptional all-weather capability. The Exocet MM40 B3c is MBDA's response to new conflicts with an evolving threat spectrum, in particular high-intensity combat in complex electronic warfare environments.

## IAI's StarLight intelligence platform sold to two countries in Asia & Middle East

Israel Aerospace Industries (IAI) has revealed that it has sold its state-of-the-art StarLight Intelligence Platform to two countries in Asia and the Middle East, in deals worth some tens of millions of dollars. StarLight is a Multi-INT intelligence platform and advanced research tool that provides operational intelligence, built and developed by IAI, a world leader in radar, SIGINT, intelligence systems and communications technologies.

StarLight addresses a key challenge facing

commanders in the modern battlefield: converting the vast amount of raw data provided by sensors into actionable intelligence, to automate and support operational decision processes – quantities of data that would overwhelm the capacity of human analysts.

IAI's President and CEO, Boaz Levy, said: "StarLight is part of IAI's suite of advanced intelligence solutions. We live in an age of information overload, and the ability to refine high-quality intelligence from a

range of sensors, in near real-time – as well as to disseminate key insights to decision makers – is critical. StarLight, which is based on IAI extensive experience in intelligence solutions integrated with unique artificial intelligence technology, is the best answer to all these challenges. The excellent reports we receive from countries that have purchased StarLight, and its rapid integration into the battlefield, shows how effective it is in providing added value to both tactical and strategic intelligence organizations."

## Huge international demand sees second World Defense Show sell out

World Defense Show has announced that its exhibitor floorspace has completely sold out with five months to go before the opening of the second edition, which will be held between 4-8 Feb 2024, in Riyadh, KSA. In anticipation of increased demand, the show footprint at the bespoke exhibition site has been expanded by 25%, to include a third hall, but the event is still oversubscribed.

Andrew Pearcey, CEO World Defense Show, said: "We are delighted to announce that our the exhibition space is completely sold out. If you are not already an exhibitor, hurry to register as a visitor to ensure you are able to participate in our exciting content programs, show features, live demos and to experience our unique Journey to the Future."

Pearcey is also pleased with the truly international representation at the show next year which has 65 countries participating as exhibitors, of which 23 are appearing for the first time. He said: "This further cements our position as the emerging global hub for the defense industry. Our inaugural event took place in 2022, at the tail end of the Covid epidemic when travel was still challenging for many people, and yet we still welcomed 65,000 visits from attendees from around the world, and announced more than SAR29.6 billion [US\$7.89 billion] of deals signed over the four days. With the show running over

five days and growing international interest in all that the Saudi defense market can offer, we expect to significantly increase the attendance and value of deals announced in 2024."

There is a diverse array of opportunities for industry-wide networking to foster relationships and partnerships among the stakeholders across the defense and security supply chain.

WDS 2024 will see the return of the Delegations Program, matching high-ranking international government representatives to exhibitors looking to expand into their specific country markets, as well as the Meet the KSA Government program, which shares the latest developments on the Kingdom's business guidelines, investment requirements and partnership processes to operate in line with the national defence industry's overall objectives.

Those attending will have the opportunity to take part in the extended B2B Connect program. Pearcey added: "Our B2B Connect program is open to visitors and exhibitors. Running over three days, B2B Connect delivers a unique opportunity for credible suppliers to connect with global buyers and official delegations."

New for WDS 2024 is the Space Arena, a dedicated section of the show which will have the latest space capabilities and technologies on show and aims to highlight the Kingdom of Saudi Arabia's strategic



ambitions in space and identify future space opportunities for both the Kingdom and international partners.

### World Defense Show:

Founded by Saudi Arabia's defense industry regulator, the General Authority for Military Industries (GAMI), WDS serves as the global stage for innovation and technological advancement in the defense industry across five key domains: air, land, sea, space and security. The second edition will take place between 4-8 February 2024 in Saudi Arabia's capital, Riyadh.

The event, covering every sector and tier of the defense industry, will deliver networking programs with high-profile attendees, live air and ground displays of advanced defense solutions, and knowledge-sharing segments that will generate opportunities for local and global military industries sectors at the centre of the global supply chain. To learn more about the show, visit [www.worlddefenseshow.com](http://www.worlddefenseshow.com).

### General Authority for Military Industries (GAMI):

The founder of World Defense Show, Saudi Arabia's General Authority for Military Industries, is the regulator, enabler and licensor for the Kingdom's military industry. GAMI is responsible for domestic defense sector development in line with KSA's commitment to Vision 2030 and to localize 50 percent of domestic defense equipment and services expenditure by 2030.



## PBS unveils the new Auxiliary Power Unit “PBS APU SPARK40”

The PBS APU SPARK40 was officially launched by PBS during the Paris Air Show 2023 in the presence of Jozef Sikela, the Minister of Industry and Trade of the Czech Republic, and Radka Konderlova, Director General of the Industrial Cooperation Division at the Ministry of Defence of the Czech Republic.

The PBS APU SPARK40 is designed to meet the requirements of medium helicopters, airplanes, and large UAVs.

This turbine power unit represents a significant improvement over the previous company's APU product line. Therefore, the company has chosen a new designation for this new APU, which was first announced at the ceremony in Paris.

The PBS SPARK40 APU brings numerous enhancements, such as doubling the available AC power for onboard systems, increasing the quantity of pressurized air, reducing weight, expanding the operating envelope, optimising the fuel-oil system, and improving reliability.

The exceptional quality and performance



of the PBS APU SPARK40 have been confirmed through its selection for a new medium helicopter project in a NATO member country.

The following are the main parameter

improvements:

- Electrical power output: 40 kVA
- Bleed Air Extraction: 27 kg/min
- Maximum operating altitude: 8,000 m



## Barfield and Skydrone Robotics Sign Sales & Support Agreement



Barfield Inc. continues to expand its active participation in the UAV industry by signing a partnership agreement with Skydrone Robotics to sell and support its UAVs in the Americas. This agreement confirms Barfield's position in high performing Quadricopters in the USA,

Canada and LATAM.

Skydrone Robotics is a technology-oriented company, offering high performance UAV, unique solutions and services to the industry and government agencies for 10 years.

"We are delighted to partner with Skydrone Robotics. Their Vehicles, Systems, Solutions

and Services are what we all expect the UAV technology to be about: solving problems in an efficient, reliable, and safe way. Their main vehicle the Versatyl is an agnostic payload multi rotors drone, offering its high flight, lift, and control performance to all existing payloads. This aligns with Barfield's commitment to deliver technically sound, cost effective, and reliable solutions to the market," said Herve Page, Barfield Chief Executive Officer.

"Barfield's 75 years presence in the Americas, expertise in aeronautics, and dedication to growing and improving the UAV market is a perfect fit to bring Skydrone Robotics products and solutions to the Americas. This is an important step forward in our overall development strategy," said Antoine Vidaling, Skydrone Robotics Chief Executive Officer & Founder.



## Israel MOD to acquire thousands of IWI-made assault rifles for infantry brigades

Israel Weapon Industries - a member of the SK Group and a global leader in the production of combat-proven small arms for military, police, law enforcement agencies, and governmental entities around the world, will supply additional thousands of Micro-TAVOR (X95) assault rifles for IDF infantry brigades under a new contract.

The contract was signed with the Israel Ministry of Defense's Department of Production and Procurement – Ground Weapons Division.

The Micro-TAVOR rifle has been in IDF active duty and reserves service since 2006. Its bullpup configuration platform creates an ergonomic and short firearm with a long barrel, giving it superior ballistics compared to other platforms.

The current order is for the 5.56x45mm caliber Micro-TAVOR with a 380mm and 419mm - barrel length. The firearm is equipped with M-1913 picatinny rails enabling the mounting of essential

accessories such as sights, lights, and visual and IR illuminators necessary for modern warfare.

This order joins previous IWI contracts for the IDF, such as the Negev LMG (light machine gun) and the 40mm grenade launcher that can be mounted on to the Micro-TAVOR rifle.

Ronen Hamudot, Executive VP Marketing and Sales of the SK Group said: "We are proud of the IDF's decision to, once again, choose the small arms advanced solutions manufactured by IWI. This is a fruitful cooperation between the company and the IDF that has been in place for many years, and which reflects the Ministry of Defense's confidence in SK Group's solutions in the light weapons sector. The Micro-TAVOR advanced design and technology was developed in collaboration with the elite units of Israel Defense Forces (IDF). During its development every technological and ergonomic aspect was taken into



consideration. We are proud to say that today it is the standard IDF assault rifle".

## Orbit to integrate airborne terminals across Viasat's expanded Ka-band network

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## India and Argentina to deepen defence ties



**D**efence Minister Rajnath Singh held talks with the Minister of Defence of Argentine Republic Jorge Enrique Taiana in New Delhi. Both Ministers discussed the ongoing defence cooperation initiatives, including measures to enhance defence industrial partnership.

The Argentine Defence Minister Jorge Enrique Taiana arrived in New Delhi on July 17, on a four-day visit to India. He was accompanied by Secretary International Affairs, Argentine Ministry of Defence Francisco Cafiero.

The Argentine Minister visited BrahMos Aerospace, Hindustan Aeronautics Ltd (HAL) facilities and separately interacted with the defence start-ups in an event organised by Innovations for Defence Excellence (iDEX).

India-Argentina relations were elevated to the level of Strategic Partnership in 2019. An MoU on defence cooperation too has been in force since 2019 while both sides are engaged to conclude further instruments to deepen the engagement. India and Argentina are working closely together to make defence engagements an important facet of their Strategic Partnership.

## Honeywell Showcases latest Military Satcom Solution at Northern Edge 2023



**H**oneywell has successfully demonstrated how JetWave MCX improves connectivity and mission effectiveness for the modern war fighter when coupled with anti-jamming technology. The demonstration took place via flights on Honeywell's Boeing 757 testbed in a remote area of Alaska during Northern Edge 2023, where more than 150 military aircraft gathered for one of the U.S. military's largest training exercises.

During Northern Edge, the U.S. Air Force and Space Force tested their new Protected Tactical Waveform (PTW) technology with modems that L3Harris developed for both airborne and ground applications. The demonstration flights showed how L3Harris's

PTW modem, called Half ATR Airborne Modem – Resilient (HAAM-R), worked with Honeywell's JetWave MCX satellite communications (SATCOM) terminal to provide warfighters with secure wideband anti-jam capabilities. During Northern Edge, tactical communications were enabled in denied, degraded and contested environments.

"We live in an era where having seamless and uninterrupted connectivity is an absolute necessity. Honeywell's JetWave MCX and L3Harris' HAAM-R both embody the combined Joint All-Domain Command and Control concept by demonstrating how a military aircraft can access the high-grade SATCOM network during multinational

and multi-domain operations," said Matt Milas, president, Defense and Space, Honeywell Aerospace. "The results of losing SATCOM access during a military mission could be disastrous. To maintain the safety and security of any mission, it is extremely important the SATCOM solution can quickly move to an alternate network when facing interruptions, so that the aircraft remains connected to the command base. This is the value Honeywell's JetWave MCX system provides."

JetWave MCX meets the needs of military operators for secure, high-speed and resilient beyond visual line of sight (BVLOS) communications. JetWave MCX is network-agnostic and can operate equally well on military or commercial Ka-band SATCOM networks such as Inmarsat and SES. JetWave MCX is also certified to operate on the Wideband Global Satcom network. "Boeing Commercial Satellite Services provided the high-capacity bandwidth, which allowed the government to test new technologies for protected tactical communications in an operational environment," said Jeof McAllister, vice president, Boeing Commercial Satellite Services.

## 777X jets; options for additional 50 737 MAX jets and 20 787 Dreamliners



**B**oeing and Air India announced that they have finalized an order for up to 290 new Boeing jets and expanded

services at the Paris Air Show. The companies held a signing ceremony to celebrate the historic purchase of Boeing's market-leading

single-aisle and widebody jets to renew and expand Air India's fleet.

## Honeywell Collaborates with ST Engineering on Retrofit, Modification and Upgrade

**H**oneywell announced a Memorandum of Understanding (MOU) with ST Engineering to explore opportunities around retrofit, modification, and upgrade (RMU) programs for fixed wing and rotary wing platforms during the Paris Airshow 2023.

This MOU strengthens the relationship between Honeywell and ST Engineering, by establishing a basis of cooperation to explore the feasibility of RMU programs. Honeywell's expertise in original equipment manufacturing (OEM), along with ST Engineering's extensive experience in

aircraft maintenance, repair, and overhaul (MRO), will be fruitful to this partnership.

"We are thrilled to announce the expansion of our partnership remit with ST Engineering at the Paris Air Show. With a consistently successful track record of providing quality RMU services for military departments around the world, we are committed to exchanging knowledge and expertise with our partners, so we are better equipped to serve existing and future customers in Singapore and the rest of the region," said Sathesh Ramiah, Vice President, Defence & Space, Asia Pacific,

Honeywell Aerospace.

Honeywell and ST Engineering have longstanding partnerships in aerospace maintenance, repair, and overhaul (MRO) services both in commercial and defense sectors. In 2021, ST Engineering was also appointed as the only licensed MRO service provider based in Asia Pacific for Honeywell components installed on LEAP-series engines used in Airbus A320neo family, Boeing 737 MAX, and COMAC C919 aircraft.



## Thales to provide new-generation sonar suite for French nuclear-powered ballistic-missile submarines



Thales has been awarded a contract by the French defence procurement agency (DGA) to develop a new sonar suite for France's third-generation nuclear-powered ballistic-missile submarines (SNLE 3G) and the programme to modernise its second-generation submarines (SNLE 2G). This new-generation sonar suite will feature a range of disruptive technologies, with large arrays housing a multitude of high-performance sensors supported by powerful Big Data algorithms. The new sonar suite will provide a comprehensive picture of the underwater acoustic environment to thwart increasingly silent threats for decades to come.

Thales is a world leader in the underwater systems market, equipping more than 50

submarines of various types — SSBNs, SSNs and conventionally powered attack submarines — in service today.

The French Ministry of the Armed Forces has once again placed its trust in Thales to maintain the French Navy's operational superiority in underwater detection capabilities. The sonar suite developed by Thales will detect, locate and classify all types of threats at short, medium and long range and provide an unprecedented level of underwater situational awareness.

As naval forces contend with a growing array of threats and challenges, submarines remain one of their most strategically important assets. The four SSBNs in the French Navy's Strategic Oceanic Force are deployed to provide a permanent nuclear

deterrent. The DGA contract covers the design and development of the sonar suite for the third-generation SSBNs and the detailed design and deployment of the sonar suite for the second-generation vessels.

A set of disruptive technologies developed by Thales will ensure the acoustic superiority of France's submarines in the years ahead. New large-format arrays housing multiple sensors will provide unparalleled levels of precision in their threat detection capabilities.

The new sensors will generate significantly larger volumes of data than earlier systems. The ALICIA data processing system (Analyse, Localisation, Identification, Classification Intégrées et Alertes) will use advanced Big Data algorithms, with intuitive user interfaces to optimise operator workload and provide decision support.

"This new contract reflects the DGA's continuing trust in Thales to support its highly strategic nuclear deterrence-related operations. The latest innovations developed by dedicated Thales engineers for the current and future generations of SSBNs will provide the French Navy with a comprehensive acoustic picture of the underwater environment to counter current and future threats, helping to consolidate its position as one of the world's leading naval forces." Gwendoline Blandin-Roger, Vice President, Underwater Systems, Thales. ■



## IAI signed contracts with 3 NATO countries for Rotem loitering munition system

Following the recent announcement that NATO member Estonia has purchased long-range loitering munitions from Israel Aerospace Industries (IAI), the company has signed separate contracts with three additional NATO countries worth several millions of dollars to supply Rotem loitering munitions. Rotem is a unique combat-proven Vertical Takeoff and Landing (VTOL) tactical loitering munition, intended for use by customers' special forces and can also serve for test and evaluation purposes.

Rotem is part of IAI's family of loitering munitions which includes Harpy, Harop and Mini-Harpy, and has been proven in different combat situations since 2019.

Avi Elisha, MBT Missile Division VP and General Manager: "This announcement follows the decision of another NATO member, Estonia, to purchase IAI's long-range loitering munitions. Acquisition of Rotem by three different NATO members reflects the high and growing global demand

for tactical loitering munitions. IAI has extensive experience in loitering munitions, having invented this type of munition almost 40 years ago. Rotem's unique capabilities include Vertical Takeoff and Landing making it a perfect choice for close combat scenarios, including urban combat."

Rotem is effective up to a range of ten kilometers and was designed for deployment by an individual soldier at the infantry or small unit/special forces level. Its simple operation and robust design make it highly cost-effective.

IAI's loitering munitions have emerged as a disrupting new weapons category following many deployments in recent conflicts. This weapon has reshaped the battlefield and inflicted damage on a scale far beyond its physical size. As a result, armed forces worldwide are interested in the offensive and defensive aspects of this type of weapon as they realize the unique capabilities they enable.

Lightweight, compact, and affordable,

Rotem is specially designed and proven to perform in urban warfare environments. It allows individual soldiers to gain an elevated view of the area around them, look over hills or within an urban environment and beyond the line of sight. The soldier can then strike the enemy as soon as targets appear.

Rotem carries both day and night electrooptical sensors to give tactical field units an advantage against adversaries, acting as a sensor and a weapon of opportunity. Unlike missiles or rockets, it can be launched to seek a target, but is disarmed if authorization to attack is not received. If this occurs, Rotem can fly back to be retrieved safely, have its battery replaced, and be deployed immediately on a new mission. With a flight endurance of 30 minutes, or with an ability to loiter for up to nine hours, Rotem can hover above a high building or hill, with an open camera and datalink – while waiting for the target to emerge. Once the target is detected Rotem can then attack instantly.

## MoD signs Rs. 2725 Cr contract with MDL for Submarine INS Shankush



Ministry of Defence has signed a contract on 30th June, 2023 for Medium Refit with Life Certification (MRLC) of Sub-Surface Killer (SSK) Class of Submarine "INS Shankush" with M/S Mazagon Dock Shipbuilders Limited (MDL), Mumbai at an overall cost of Rs. 2725 Cr.

Shankush is a SSK Class of Submarine to be re-fitted at MDL, Mumbai. Delivery of Submarine post MRLC will be in 2026. After completion of MRLC, INS Shankush will be combat ready and will join the active fleet of the Indian Navy with

upgraded combat capability.

This project is an important step towards development of MDL as Maintenance, Repair & Overhaul (MRO) Hub for supporting the industrial ecosystem of India.

The project would involve more than 30 MSMEs and would lead to employment generation of 1200 Mandays per day for the project duration.

The project will be a proud flag bearer of Atmanirbhar Bharat in consonance with the Make-in-India initiative of Government of India

## IAI MMR radars, have successfully passed Czech Army military tests



Israel Aerospace Industries MMR radars have successfully passed Czech Army Military tests. The MMR radars are the most advanced air surveillance and air-defense radars in the world. The radar deal was signed with the Czech Defence Ministry in December 2019, and included close industrial cooperation between Israel Aerospace Industries (IAI) and local Czech companies RETIA and VTU.

The joint production includes the transfer of technology to local Czech industries for production and lifetime maintenance, and upgrading existing systems to incorporate the world's most advanced technologies. To date, 200 systems have been sold worldwide, and integrated into air-defense systems such as Barak and Iron Dome.

IAI vice president and Elta CEO Yoav Tourgeman: "IAI's MMR radars can be found in all of Israel's defensive systems, and have proven their operational effectiveness providing Air Situational Picture for many years and assisting air and missile defense."

The systems supplied to the Czech Republic, and those still to be delivered in the coming months, are intended to fulfil the same function, to safeguard the Czech people, providing them with the most advanced defence against airborne threats. We are proud to be involved in this important cooperation which we have put in place with local companies, sharing knowledge and technologies. Despite three challenging years since signing the agreement, when we had to deal with the global challenges brought about by the corona pandemic,

including shutdowns, and integration to local C2 and NATO systems, IAI-ELTA and the local Czech companies succeeded to develop pathbreaking solutions, transferring both knowledge and technology. The radar was successfully integrated into NATO C@ echelons through the Czech C2. The advanced radars to the Czech Republic can simultaneously identify and classify hundreds of targets, drones, missile barrages, rockets, and other new threats in the arena.

Israeli radars are compatible with NATO systems and will replace the previously-used but now obsolete radar technology of Russian origin.

An important part of the project is Czech industry involvement in a contract worth

some thirty percent of the total value, which was signed together with the main supply agreement between the Czech and Israeli Ministries of Defence. Under this contract, ELTA Systems has transferred the capability to produce modules that make up the radar antenna, using gallium nitride technology, to its Czech industrial partner, RETIA. The state-owned Military Technical Institute (VTU) is also a partner. An assembly line for four radar modules was established in RETIA which will also provide these modules for call CZ. This capability also allows local companies to provide Czech self-reliant maintenance and support for the full lifetime off the radars.



## IAI Announces New Generation AESA SAR/GMTI Reconnaissance System

Israel Aerospace Industries (IAI) have announced the release of the ELM-2060PES, a new generation AESA SAR/GMTI Pod for Fighter Aircraft, recently developed by its defense systems subsidiary, ELTA Systems Ltd.

The ELM-2060PES builds on the legacy of the combat proven ELM-2060P system, in service for decades with Air Forces worldwide.

The ELM-2060PES Pod is a self-contained Active Electronically Scanned Array (AESA) Airborne Radar System, providing state of art Synthetic Aperture Radar (SAR) and Ground Moving Target Indication (GMTI) capabilities; a Bi-directional Line-of-Sight (LOS) wide band Datalink, interconnected with a Ground Datalink and Exploitation Station (GES). The airborne system is housed within a fully autonomous detachable centerline pod that mirrors the aerodynamic envelope of certified Fighter Aircraft fuel tank and is operated by aircraft avionics or via the Datalink from the Ground Station.

The ELM-2060PES produces radar images that approach photographic quality, for



Operative Reconnaissance, Surveillance of Time Critical Targets (TCT), Precision Strike support and Battle Damage Assessment (BDA), and operates as a true, day and night sensor capable of penetrating clouds, rain, smoke, fog and smog. The ELM-2060PES has advanced radar modes for High Resolution Target Classification and precision Geo-location against both fixed and moving Ground Targets, providing the Operational Users with quality Actionable Intelligence. The ELM-2060PES extended-range and ultra-wide swath capabilities provide Real Time, All-weather and

Visibility, Stand-off Reconnaissance and Surveillance mission capabilities, while operating in most challenging scenarios.

Yoav Turgeman, ELTA President & IAI Executive VP, stated: "ELTA's new AESA SAR/GMTI system delivers powerful, real-time reconnaissance capabilities by incorporating our latest technological developments, including full AESA and unique processing techniques. The high-quality data of this system enables interpretation and extraction of critical Image Intelligence essential for operating in the modern battlefield".

## MBDA's Aster missile Demonstrates Unmatched Performance

NATO exercises have again proven the potent air defence capabilities of MBDA's Aster missile in providing long-range protection from difficult air threats.

Exercise Formidable Shield saw four successful Aster firings conducted by the Royal Navy, French Navy and Italian Navy against supersonic and subsonic sea skimming and manoeuvring targets.

Formidable Shield is conducted from the UK's Hebrides live firing range and is designed to test the Alliance's Integrated Air and Missile Defence (IAMD) capabilities, being its main such exercise in Europe. The exercise saw 13 NATO allies and 20 NATO warships co-operate to test their integrated air defence capabilities against a range of challenging scenarios, with Aster successfully conducting single-shot kills against all targets.

During the exercise, Italian Navy frigate "Margottini" successfully fired an Aster 30 against a Coyote GQM-163A supersonic target and an Aster 15 against a Firejet target. Meanwhile, French Navy frigate "Bretagne" fired an Aster 30 against a Coyote GQM-163A supersonic target and Royal Navy destroyer "HMS Defender" successfully conducted an Aster 30 firing against a Firejet.



# USMC Completes 20,000 Flight Hours with MUX MALE MQ-9A



General Atomics Aeronautical Systems, Inc. (GA-ASI) congratulates the U.S. Marine Corps (USMC) on achieving a significant milestone of surpassing 20,000 flight hours with their Marine Air-Ground Task Force (MAGTF) Unmanned Expeditionary (MUX) Medium-Altitude, High-Endurance (MALE) MQ-9A Unmanned Aircraft System (UAS).

To date, GA-ASI has delivered eight MQ-9A UAS to the USMC. Two of these MQ-9A aircraft are actively engaged in operational missions, playing a vital role in supporting mission-critical Marine Corps objectives. The USMC awaits delivery of 12 additional

aircraft, which will fulfill their goal of three squadrons by 2025.

"This strategic acquisition of MQ-9As underscores the USMC's commitment to strengthening their aerial surveillance capabilities and demonstrates their confidence in GA-ASI's expertise in delivering top-tier UAS," said GA-ASI President David R. Alexander.

Renowned for its fault-tolerant flight control system and triple-redundant avionics system architecture, the MQ-9A UAS embodies the industry's highest standards of reliability and performance, surpassing those of many manned aircraft.

The USMC fleet will ultimately be entirely composed of the MQ-9A Extended Range (ER) configuration, enhanced with wing-borne fuel pods and reinforced landing gear. This model has been specifically designed to extend its endurance to more than 30 hours, enabling persistent long-endurance surveillance capabilities. Equipped with Full-Motion Video and both a Synthetic Aperture Radar and a Moving Target Indicator/ Maritime Mode Radar, this advanced system provides the USMC with a comprehensive real-time situational awareness picture.

The USMC's 20,000 flight hours with MQ-9A represent an impressive accomplishment in the field of unmanned aviation. GA-ASI is honored to have played a role in this achievement and looks forward to continuing its collaboration with the USMC to further advance the capabilities of unmanned systems and support their growing UAS squadrons.

# Elbit Systems Awarded \$150 Million Contract for PULS Rocket Artillery Systems



Elbit Systems Ltd. has been awarded a \$150 million contract to supply PULS™ (Precise and Universal

Launching Systems) rocket launchers and a package of precision-guided long-range rockets to an international customer. The

contract will be performed over a period of three years.

Elbit Systems' PULS provides a comprehensive and cost effective solution, that can launch unguided rockets, precision guided munitions and missiles with an effective range of up to 300km. With its unique design, the PULS can also support future growth capabilities such as the ability to launch loitering munitions, including the canister launched configuration of Elbit Systems' SkyStriker loitering munition.

The PULS launcher is fully adaptable to existing wheeled and tracked platforms, enabling a significant reduction in maintenance and training costs.

Yehuda (Udi) Vered, General Manager of Elbit System Land: "We are seeing an increased demand for our advanced artillery solutions from militaries looking to increase the effectiveness of their armed forces. This contract provides an additional vote of confidence in Elbit Systems' PULS rocket artillery solutions."



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## Rosoboronexport to present Counter-PGM systems at ARMY 2023

Rosoboronexport JSC (part of Rostec State Corporation) will showcase highly effective Counter Precision Guided Munition (Counter-PGM) systems developed and produced by Russian defense industry to guests and visitors of the ARMY 2023 Forum to be held at Moscow.



"The experience of military conflicts shows a rapidly growing trend towards the use of land-,

air- and sea-based precision guided munitions. With their stealthy signature, ability to maneuver and penetrate various air defenses, smart missiles and bombs can inflict significant damage on military, economic, and infrastructure facilities. Russian defense companies have developed and produce high-tech systems able to counter the most advanced PGMs. Their effectiveness has been proven in real combat conditions," - says Rosoboronexport Director General Alexander Mikheev.

"Rosoboronexport presents a wide range of export versions of Russian systems designed both to destroy and completely

disable PGMs. Their combined use provides reliable protection of military and civilian facilities against any current and emerging weapons. The company is ready, in the framework of technology cooperation, to jointly develop and produce new models with partners, given high competence of Russian enterprises."

In the segment of Counter-PGM electronic warfare systems, common jamming modules of the Pole-21E electronic countermeasures (ECM) system designed to protect strategic assets and infrastructure against pinpoint strikes by PGMs, as well as the R-330Zh automated satellite communication/navigation ECM system are in high demand.

These systems can effectively protect the covered facilities from single and massive

strikes by any precision guided conventional-warhead weapons fitted with various guidance systems, including when the enemy intensely deploys countermeasures.

They are capable to jam navigation equipment of precision guided weapons and prevent the guidance of its submunitions in the designated area, as well as inform the covered facilities. The systems can be controlled remotely and operate in a stand-alone automated mode.

Almaz-Antey Corporation's Viking, Buk-M2E, and Tor SAM systems are capable to effectively engage precision guided munitions and optimal among those presented by Rosoboronexport in the world market. The Pantsir-S1 self-propelled anti-aircraft gun/missile system and its upgraded



version, the Pantsir-S1M, produced by High Precision Systems, a Rostec subsidiary, is equally effective against PGMs.

Rosoboronexport and manufacturers will hold presentations of Counter-PGM systems on the sidelines of the ARMY 2023 International Military-Technical Forum, which will be held from August 14 to 20 at the Patriot Convention and Exhibition Center of the Armed Forces of the Russian Federation. Interested partners will be provided with the necessary information about the performance characteristics, features and experience of using the weapons exhibited as well as told about their competitive advantages in the global market.



## Japan - India Maritime Exercise



The 7th edition of Japan India Maritime Exercise 2023 (JIMEX 23) hosted by the Indian Navy concluded in the Bay

of Bengal with the two sides bidding farewell to each other with a customary steampast. Indian Naval ships Delhi, Kamorta and Shakti,

under the command of RAdm Gurcharan Singh, Flag Officer Commanding Eastern Fleet and Japan Maritime Self Defence Force (JMSDF) ship Samidare under the command of RAdm Nishiyama Takahiro, Commander Escort Flotilla One, participated in the six day long exercise.

JIMEX 23 witnessed complex exercises, undertaken jointly by the two navies. Both sides engaged in advanced level exercises in all three domains of maritime warfare - surface, sub surface and air. Besides ships and their integral helicopters, the exercise also witnessed the participation of fighter aircraft, maritime patrol aircraft and a submarine. JIMEX 23 ended on a high note revalidating common procedures and enhancing interoperability between the IN and JMSDF.



## BIRD Aerosystems and ČLS Announce Strategic Cooperation



**B**IRD Aerosystems, a global provider of innovative defense technology and solutions that protect the air, sea, and land fleets of governments and related agencies, and Česká letecká servisní (ČLS), a division of CSG Aerospace which specializes in the integration and modernization of avionics systems, announced strategic cooperation aimed at expanding their joint marketing efforts and meeting the increasing demand for advanced airborne missile protection systems in Central Europe.

The strategic cooperation arrives after the two companies have already joined forces on several successful projects, where BIRD's AMPS airborne missile protection systems, including the SPREOS DIRCM, were provided and installed on aircraft of European customers. By joining forces, both companies aim to strengthen their presence

in the European market, expand their customer base, and effectively address the high demand for airborne missile protection systems in Central Europe.

Commenting on the partnership, Ronen Factor, Co-CEO and Founder at BIRD Aerosystems, stated, "We are excited to collaborate with Česká letecká servisní (ČLS) to enhance our market reach further and address the growing demand for BIRD's AMPS missile protection systems in Central Europe. ČLS brings unique expertise and experience in avionics integration and modernization, making them an ideal partner for us. Together, we will be able to provide comprehensive solutions that cater to the specific requirements of our customers."

Monika Kowalczkova, General Director of Česká letecká servisní (ČLS), added, "We are delighted to join forces with BIRD

Aerosystems in this strategic cooperation. Their industry-leading airborne defense solutions complement our avionics integration and modernization capabilities perfectly. Together, we are well-positioned to meet the evolving challenges of the defense industry and contribute to the security and protection of fleets and ground assets."

BIRD's AMPS Airborne Missile Protection System provides the most enhanced protection for military and civilian aircraft against the growing threat of ground-to-air missiles (MANPADS). The system is designed to automatically detect, verify, and foil SAM attacks through the effective use of countermeasure decoys (Flares and Chaff) and Directional Infrared Countermeasures (DIRCM) that jam the missile's IR seeker and protect the aircraft.

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## Launch of Second ACTCM Barge ,Yard 126



**A**mmunition Cum Torpedo Cum Missile (ACTCM) Barge, Yard 126 (LSAM 16) was launched by Cmde Sunil Kaushik, Warship Production Superintendent (Mumbai) at M/s Suryadipta Projects Pvt Ltd, Thane. With all major and auxiliary equipment / systems

sourced from indigenous manufacturers, this Barge is proud flag bearer of "Make in India" initiative of Ministry of Defence.

Contract for construction of 11 x ACTCM Barge was concluded with M/s Suryadipta Projects Pvt Ltd, Thane, a MSME, in

consonance with "Aatmanirbhar Bharat" initiatives of the Government of India. This Barge is being built with a service life of 30 years. The availability of ACTCM Barges will provide impetus to Operational commitments of IN by facilitating Transportation, Embarkation and Disembarkation of articles ammunition to IN Ships both alongside jetties and at outer harbours.

The launch and delivery of two Ammunition Barges to the Indian Navy in the past two months by two MSME Shipyards – M/s SECON and M/s Suryadipta situated on the east and the west coast of the country has exhibited Indian Navy's commitment to support MSME industry and strengthen Aatmanirbhar Bharat initiative of the Government of India.

## Pratt & Whitney's F135 engine receives full funding support from Senate



**P**ratt & Whitney, an RTX (NYSE: RTX) business, continues to receive positive support for various F135-related program items on the path toward finalizing the 2024 appropriations bill. On July 27, the Senate Appropriations Committee, led by Chairman Jon Tester (D-MT) and Ranking Member Susan Collins (R-ME), passed a bipartisan bill that included:

\$497 million for the development of the F135 engine core upgrade (ECU), the DoD's chosen F-35 engine modernization effort. \$264 million above the President's budget

request for F135 engine spares and repair parts.

A prohibition against integrating any alternate engine on any F-35 variant.

\$280 million for the development of future engine technology that could be used on 6th generation tactical aircraft.

"I want to personally thank Senators Tester and Collins for their leadership on this effort, because it's essential to ensuring our limited DoD funds go to the most urgent, high-priority needs," said Jeff Shockey, senior vice president of

RTX Global Government Relations. "I also want to express my gratitude to the Senate Appropriations Chair Patty Murray (D-WA), Senator Chris Murphy (D-CT) and the entire Connecticut and Maine delegations for their support and advocacy."

The F135 supports nearly 55,000 jobs across 41 states and more than 260 domestic suppliers. In March 2023, the U.S. Air Force, U.S. Marine Corps, and U.S. Navy chose to upgrade the F135 versus replace it with an entirely new engine. The decision was announced as part of the administration's 2024 budget proposal.

"The Senate Appropriations Committee's full funding of the Engine Core Upgrade program, its addition of \$280 million for future-generation propulsion technologies, and language prohibiting integration of an alternate engine on any F-35 variant are critically important," said Jill Albertelli, president of Military Engines at Pratt & Whitney. "Our collective focus should be on maximizing the performance of all three variants of the F-35, while prioritizing the advancement of sixth-generation solutions that serve our highest, most urgent national defense priorities."

## Saab completes operational training of Brazilian pilots to fly Gripen



**T**he last class of operational pilots responsible for the deployment of the F-39 Gripen in the 1st Air Defense Group (1st GDA) of the Brazilian Air Force (FAB), concluded the Delta Conversion Training at the Gripen Centre, located at the F 7 Wing in Sâtenäs, in the western region of Sweden.

The course, conducted by the Swedish Air Force's Phoenix Squadron, is divided into two stages. The Conversion Training, with a duration of 11 weeks and 50 flights per pilot, covers the basic operation of the fighter jet in both solo and formation missions during day and night periods. The Combat Readiness Training includes 25 flights over approximately nine weeks, exploring the air-to-air combat capabilities of the fighter, including the use of missiles, cannons, and the human-machine interface, one of the

main features of Gripen.

"The Phoenix Squadron is dedicated to the training of Gripen pilots, and we are equipped appropriately for that, including flight simulators. The Brazilian pilots are highly trained and come here with extensive operational experience, both from the F-5M and AMX units. They quickly learned about the operation, configuration, and flying of Gripen," revealed Major Richard Carlqvist, commander of the Phoenix Squadron.

The Gripen Centre serves as a hub for training pilots who will fly Gripen, both from foreign nations and the Swedish Air Force itself. Throughout the course, students train on the Gripen C/D, with single and twin-seater configurations respectively. Despite being a different Gripen fighter than that acquired by Brazil, this experience is essential as it helps pilots understand the system,

operational mode, and flight controls, considering the similarity in some aspects between these different Gripens.

"After being adapted to Gripen C/D in Sweden, our pilots will undergo their conversion to Gripen E entirely in Brazil, using the resources already available at the 1st GDA, mainly through the planning stations and flight simulators. The courses will be conducted within the scope of the 1st GDA and taught by selected Swedish pilots who will remain at the Anápolis air base as flight instructors. They work together with the Brazilian pilots on the conversion and operational deployment of the aircraft," explained Lieutenant Colonel Aviator Gustavo de Oliveira Pascotto, commander of the 1st GDA.

## Mission Gaganyaan completed Phase-1 training

**T**he first batch of crew recovery team of Mission Gaganyaan completed Phase-1 training at Indian Navy's Water Survival Training Facility (WSTF) at Kochi. Utilising the state-of-the-art facility, the team comprising of Indian Naval Divers and Marine Commandos underwent recovery training of crew module in varied

sea conditions.

The two weeks training capsule covered a brief on the conduct of the mission, actions to be taken during medical exigencies and familiarization with different aircraft and their rescue equipment. The training also validated the SOPs formulated jointly by the Indian Navy and ISRO. On the concluding

day, Dr. Mohan M, Director of Human Space Flight Centre, ISRO witnessed the recovery demonstration and interacted with the team. The team trained at WSTF will now be involved in recovery of test launches planned by ISRO in the forthcoming months.

OPAL connects to NATO's Link 16

## ESG and IAI unveil groundbreaking interoperability



Germany's ESG Elektroniksystem and Logistik, and Israel Aerospace Industries (IAI), have set up a groundbreaking demonstrator. Based at ESG, this will highlight the exceptional interoperability achieved between the IAI-developed OPAL real-time net-centric warfare network (designated by ESG as NEOS), and the Link 16 tactical datalink. The collaboration aims at showcasing a German gateway solution that seamlessly converts messages between Link 16 and the real-time decentralized airborne OPAL/NEOS network.

The demonstrator is a significant leap

forward in enhancing information exchange and mission effectiveness for air-combat operations. By integrating Link 16, widely used by NATO and allied forces, with the innovative OPAL network, interoperability between different platforms and mission efficiency are significantly improved. This opens up new possibilities for secure and efficient real-time data-sharing among diverse airborne assets, ensuring a higher level of situational awareness and more effective decision-making for complex operations.

Dr. Ingo Eickmann, EVP Strategic Business Development of ESG stated: "We are

delighted to join forces with IAI in this endeavor, demonstrating the power of international cooperation and technological integration. Combining our expertise with IAI's OPAL network, we can achieve seamless communication and interoperability between disparate systems, maximizing the effectiveness and safety of our armed forces."

Shmuel Kuzi, EVP and General Manager of IAI's Aviation Group said: "We are proud to collaborate with ESG on this remarkable joint demonstrator, which showcases the interoperability between the OPAL network and the widely-implemented Link 16 system. This highlights our commitment to developing innovative solutions to empower our customers with enhanced interoperability capabilities, fostering improved coordination and information sharing for optimal mission success."

The joint demonstrator is a testament to ESG and IAI's shared vision to provide cutting-edge solutions for the aerospace and defense sectors, marking an important milestone in the ongoing development of advanced communication networks and interoperable systems, and revolutionizing the way information is shared and utilized across air-defense operations. ■

## GRSE signs MoU with Kongsberg Maritime for Licensed Production of Water Jets in India



Garden Reach Shipbuilders and Engineers (GRSE) Ltd and Kongsberg Maritime (KM), Finland signed a Memorandum of Understanding (MoU) for co-production of indigenous Water Jets (WJs) of up to 3.5 MW.

The MoU was signed by Cmde P R Hari, IN (Retd), Chairman and Managing Director, GRSE and Ottar Ristesund, SVP, Sales, Propulsion and Engines, Kongsberg Maritime (KM), in the presence of Vice Admiral Sandeep Naithani, AVSM, VSM, Chief of Materiel, Indian Navy.

Waterjet Propulsion Systems are extensively used onboard Indian Navy & Indian Coast Guard ships and therefore, this collaborative effort of GRSE & Kongsberg Maritime (KM) has huge market potential in the coming years.

Taking giant strides towards Aatmanirbharta, GRSE had earlier signed a MoU with M/s Rolls Royce for co-production of high-speed Marine Diesel Engines. The shipyard has also recently signed a contract worth (Approx.) Rs 250 Crs for manufacture and supply of 30 MM Naval Surface Guns to the Indian Navy.

## Airbus and Leonardo sign MoU for future integrated training systems market



strengthening the European defence environment and for achieving the desired "strategic autonomy", said Jean-Brice Dumont, Head of Military Air System Airbus, 'Leonardo is globally recognized as a key player in the military pilot training business segment and we believe our synergies could give the right answer to our customer requirements'.

'With this agreement, Leonardo and Airbus combine their distinctive experience and capabilities in order to provide European and International customers with the most advanced and effective Integrated Training Systems solutions', said Marco Zoff, Leonardo's Aircraft Division Managing Director. 'Thanks to a common technology development roadmap based on M-346 ITS, the two Companies will also progressively shape advanced capabilities for the future air power, by intercepting emerging needs and forging innovative solutions, to provide effective next-generation fast-jet pilot training and operational readiness in complex scenarios'. ■

Air power new frontiers and emerging trends are accelerating the development of new capabilities and technologies for fighter pilot training

Airbus and Leonardo have signed a Memorandum of Understanding (MoU) to jointly promote integrated training systems and study the future solutions to tackle Air Dominance challenges.

Under this collaboration, both companies will jointly address and pursue business opportunities for the provision of advanced

training systems leveraging on M-346 proven experience, thanks to over 100,000 flight hours performed worldwide by the aircraft. Airbus and Leonardo will also explore deepening ties and industrial cooperation to tackle future military pilot training domains. All based on cooperation and synergies on specific platforms and programs, also in the framework of a broader European and International collaboration.

'A strong, innovative and competitive defence industry is a prerequisite for

## Royal Air Force Deploys INDRA's Lanza 3D radar

The Royal Air Force (RAF) is operating Indra's long-range transportable Lanza 3D radar (LTR-25) as an integral part of the surveillance of the United Kingdom's airspace. As part of the RAF's Global Enablement Team, it is as an asset that is prepared to be rapidly deployed anywhere in the world.

Throughout the weekend, the RAF exhibited its capabilities at the Royal International Air Tattoo (RIAT), one of the largest military aviation shows in the world, that brings together the world's foremost air forces and Air Chiefs.

"The deployments of this radar with the RAF, highlights Indra's ability to meet the

needs of the most technically demanding clients and reinforces our position as one of the world's leading radar suppliers", commented Domingo Castro, Indra's Integrated Systems and Space Director.

The Lanza is a family of state-of-the-art 3D radar systems, based on a fully modular and scalable architecture, both in hardware and software. The RAF's Lanza Radar has been designed as a tactical deployable radar, capable of being rapidly transported by air, sea, rail and road.

The system can detect and track tactical ballistic missiles, providing air surveillance command and control centres with the early warning information required to neutralise

attacks. It delivers the trajectory parameters necessary to initiate offensive, defensive or intelligence measures, such as the estimated launch point, cue point, impact, interception, etc. ■



## SAMI-AEC Forges Partnership with Lockheed Martin to Bolster Regional Repair Capabilities



SAMI-AEC, a subsidiary of SAMI (the Saudi Arabia's national champion of defense industries), proudly announces a strategic partnership with Lockheed Martin. This partnership officially designates SAMI-AEC's Sniper Advanced Targeting Pod (ATP) Repair Center as the world's premier, Middle East-based repair facility for Line-Replaceable Units (LRUs), offering enhanced maintenance and repair services.

Lockheed Martin's decision to select SAMI-AEC's facility as its primary hub for specialized unit repairs reinforces the unrivalled competencies and expertise of SAMI-AEC in the realm of contemporary electronics and manufacturing. This unique designation in the Middle East signifies a major milestone for both SAMI-AEC and the Kingdom of Saudi Arabia in fortifying their defense capabilities through state-of-the-art technology and innovation.

This collaboration aligns perfectly with SAMI-AEC's pledge to support the localization of 50% of the country's military

spending by the end of the decade, a goal set forth by Saudi Vision 2030. In tandem with Lockheed Martin, SAMI-AEC is not only enhancing local defense capacities but also contributing to the development of Saudi Arabia's industrial and commercial sectors.

Eng. Ziad Al-Musallam, CEO of SAMI-AEC, welcomed the partnership with high spirits: "This cooperation with Lockheed Martin solidifies SAMI-AEC's outstanding reputation in providing superior repair and maintenance services. As the only designated repair center in the Middle East for the Sniper Pod LRU, we are set to deliver time and cost-efficient solutions to our clients. We remain dedicated to the fulfillment of Saudi Vision 2030's objectives, reaffirming our commitment to bolstering the Kingdom's defense sector."

Joseph Rank, Chief Executive for Lockheed Martin in Saudi Arabia and Africa, said: "Partnering with SAMI-AEC allows us to tap into their world-class repair proficiency, ensuring the continuous upkeep and improvement of our LRUs. By working together, we aim to provide advanced

defensive capabilities that outmatch and pre-empt emerging threats. This cooperation aligns with our mission of delivering innovative solutions that help our clients navigate, deter, and stay ahead of potential threats."

He continued: "our partnership with SAMI-AEC reflects our deep support to the Kingdom localization agenda and Vision 2030".

This groundbreaking collaboration has already shown remarkable progress. SAMI-AEC has seen a 53% increase in the Sniper Pod LRU repair capability. SAMI-AEC is an industry-leading technology and manufacturing enterprise specializing in the Defense and Aerospace, Digital, Energy, and Security sectors Established in Riyadh in 1988. With a staff of over 2,800, including 85% highly qualified Saudi nationals and more than 800 expert engineers, the company provides high-tech product design, development, service, and maintenance.

## Letter of Authority template European Cooperation in Defence: Additional Order for EUROSAM



The Italian Airforce has chosen the European Long Range Surface to Air Missile Defence System.

OCCAR-EA Director Joachim Sucker and eurosam Managing Director Eva Bruxmeier signed the Amendment of the FSAF-PAAMS Sustainment & Enhancement (S&E) contract for the procurement of new generation ground based air defence systems SAMP/T NG for Italian Air Force. This procurement adds to the SAMP/T NG production ordered in January 2023 for the Italian Army and French Air and Space Force.

Organisation Conjointe de Coopération en matière d'Armement (OCCAR) has awarded this amendment to the S&E contract, by delegation of Segretariato Generale della Difesa e Direzione Nazionale degli Armamenti (SEGREDIFESA) and Direction Générale de l'Armement (DGA), to the Italo-French consortium eurosam; backed by its three shareholders MBDA France, MBDA Italia and Thales LAS France.

The contract was signed in the presence of SEGREDIFESA, DGA and Italian Air Force representatives as it sees this Armed Force joining as a new FSAF-PAAMS domestic user, following the Italian Army and Navy, the French Navy and Air and Space Force and

the British Royal Navy.

With this contract, Italian Air Force will be equipped with SAMP/T NG ground-to-air defence capabilities, fitted with the Kronos Grand Mobile High Power radar from Leonardo (see note).

The SAMP/T NG system development, launched in 2021 in cooperation between France and Italy, is an enhancement of the SAMP/T system in service since 2010 and currently deployed in Europe and in the Middle-East.

### The SAMP/T NG system is based on:

An enhanced missile to enlarge the ASTER family: the ASTER Block 1 NT (new technology) from MBDA including a new seeker and a new computer.

### An upgraded launcher.

A 360-degree new multifunction rotating Active Electronically Scanned Array radar: the Kronos Grand Mobile High Power from Leonardo for Italy and the Ground Fire 300 from Thales for France.

A common command and control module based on upgraded open command and control software architecture and enhanced connectivity.

**The SAMP/T NG is designed to achieve all Ground-Based Air Defence missions with enhanced key capabilities. It is a long-range surface-to-air missile defence system able to:**

Offer a 350 km-plus aerial surveillance range and a 150 km-plus interception range.

Operate in a dense civilian air environment, in cooperation with friendly military aircraft and fully integrated into air defence networks.

Provide a 360-degree protection to armed forces and sensitive civil or military sites.

Offer a dual capability to defeat simultaneously all types of targets, in any combination of types.

Counter emerging and future threats as diverse as hypersonic missiles, manoeuvring ballistic missiles, re-entry vehicle ballistic missiles, high velocity cruise missiles, UAVs and highly manoeuvring aircraft, in a saturation attack scenario and a challenging cyber environment.

Deploy quickly with a limited number of personnel and integrate easily in an air-defence network.





## Etihad Airways among the most punctual Airlines in Middle East

Etihad Airways, the national airline of the United Arab Emirates, ranks among the most on-time airlines in the Middle East and one of the most punctual carriers worldwide. In the first half of 2023, Etihad has achieved an on-time arrival performance rating within 15 minutes of 83.4%.

In its Punctuality League ratings for 2023 thus far, the global aviation analytics group (OAG) lists Etihad as one of the few airlines in the Middle East that consistently operates

above 80% on-time arrival performance and maintains one of the lowest cancellation rates worldwide.

Mohammad Al Bulooki, Chief Operating Officer of Etihad Airways, said "This half year result is an important milestone for Etihad Airways, and a testament to the airline's commitment to consistently deliver reliable operations while exploring further innovative solutions to enhance it. Four million passengers will fly with Etihad over the summer months via its home base,

Abu Dhabi International Airport, a strong partner that underpins the airline's successful operations. Guests can expect a reliable flight schedule coupled with an award-winning service."

On-time performance is defined by OAG as a flight arriving within 15 minutes of its scheduled time – a standard measure within the airline industry, taking into account the large range of variable factors which can affect operations.

## Indra to Strengthen Eurofighter's Survivability



Indra is furthering the integration of one of the most important elements for the evolution of the system that protects the Eurofighter Typhoon against enemy missile attacks and radar. The company will enhance the Praetorian DASS's bandwidth to increase the aircraft's ability to detect threats and fly

safely during its most complex missions.

At the Royal International Air Tattoo (RIAT), the world's largest military air event, Leonardo, on behalf of the EuroDASS consortium (Leonardo, Elettronica, Indra and Hensoldt), announced the next package of improvements to the Praetorian DASS self-protection system. This has been accompanied by a static exhibition of the key enhancement proposed, including the bandwidth enhancement developed by Indra.

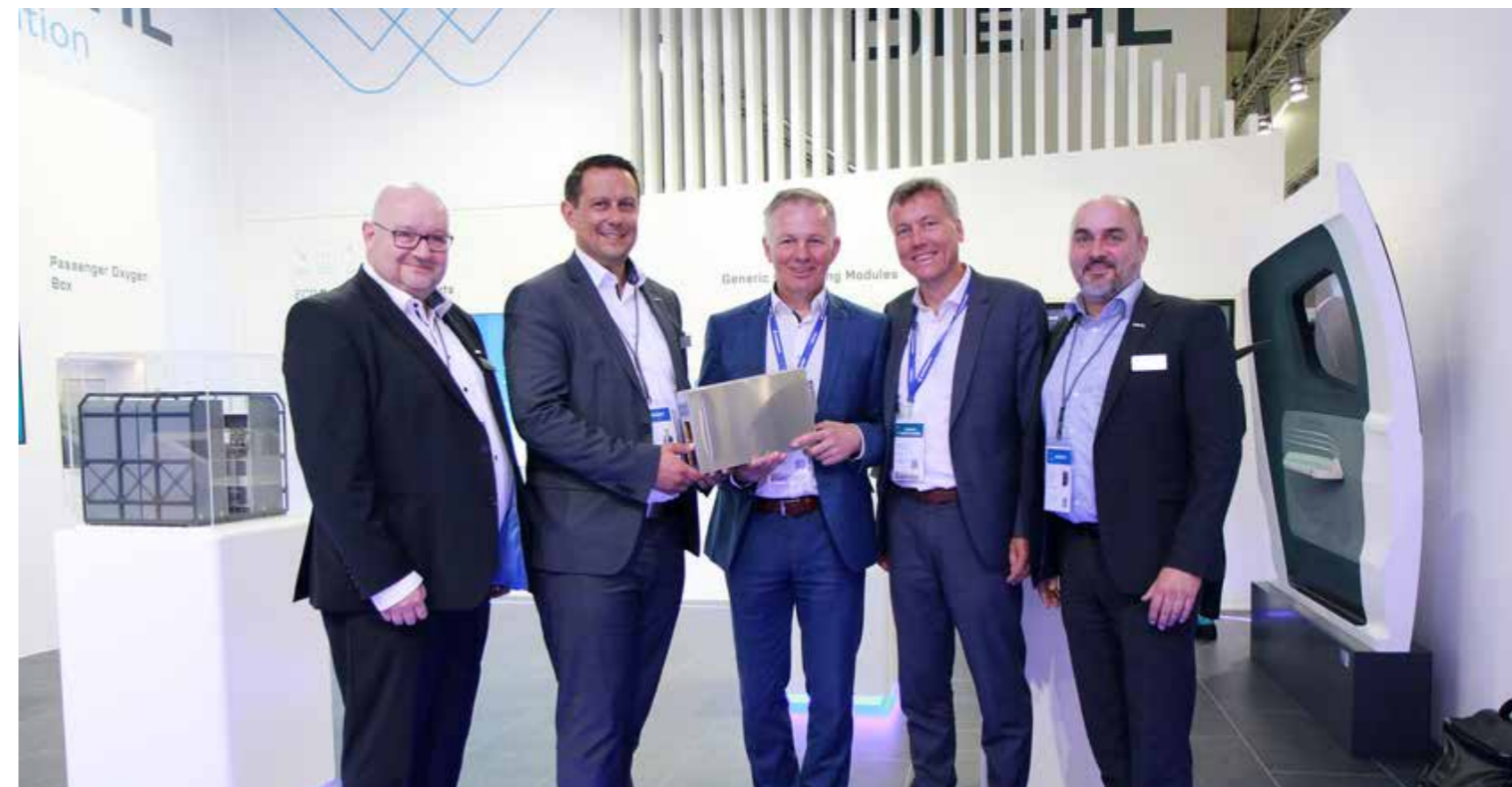
These improvements will be presented to the Eurofighter Typhoon partner countries, which are Germany, Spain, Italy and the United Kingdom, and subsequently offered to export customers. Their development will increase the survivability of the aircraft and lay the foundations for the defence system's integration with Typhoon's highly capable

E-scan radars. This includes the ECRS Mk1 that is being developed by Hensoldt and Indra with the support of Leonardo for the German and Spanish Air Forces, the ECRS Mk2 currently under development by Leonardo and BAE Systems with the participation of Indra for UK Typhoons and the ECRS Mk0, which is in operation in Kuwait and Qatar.

Indra's Defence Platforms director, Pedro Barco, highlighted that "Indra is the second-largest supplier of avionics systems for the Eurofighter Typhoon and the only company involved in the evolution of the self-protection system and the development of the two new versions of the radar, once again highlighting the company's ability to accelerate the development of the new generation of technologies that European armed forces are demanding".

## Tiger MkIII Programme: Diehl develops computer system for helicopter armament

Airbus Helicopters and Diehl Aerospace signed the contract at the Paris Air Show.



From left to right: Benno Petersen (Diehl Aerospace), Florian Maier (Diehl Aerospace), Oliver Lehmann (Airbus Helicopters), Ulrich Linnemann (Airbus Helicopters) and Marco Krause (Diehl Aerospace).

The Tiger MkIII programme is a major upgrade for the French and Spanish attack helicopters. As a joint venture of Diehl Aviation and Thales, Diehl Aerospace has been awarded for the development, production and customer support of the Tiger Armament Computer (TAC) and its operating system for Airbus Helicopters. With this upgrade the Tiger will remain an essential asset for European armed forces in the coming decades and will meet upcoming tasks.

The computer offers outstanding processing power and meets the highest requirements on the availability of the

system. Task of the TAC is to reliably control the weapons arsenal – which includes turret guns, laser-guided missiles, and rockets – even under the most severe conditions. A special advantage: The armed forces can install a wide variety of software on the TAC with highest flexibility and add additional functions at any time. With substantially increased performance, both the weight and size of the computer platform have been significantly reduced. In this way, Diehl Aerospace offers a unique combination of efficiency, flexibility, and scalability – and thus ensures the future readiness of the attack helicopter.

Florian Maier, CEO of Diehl Aerospace: "Europe's armed forces need powerful helicopters. As this is more important than ever, I am proud that Diehl Aerospace contributes in equipping the Tiger MkIII with the best armament computer. I consider it exemplary how Airbus Helicopters and Diehl Aerospace prove European cooperation in such an important helicopter upgrade programme."

Representatives of both companies took a prototype of the Tiger Armament Computer (TAC) into their midst after signing the contract at the Paris Air Show.

## Liebherr and HAECO boost their landing gear service agreement in China



Liebherr-Aerospace supplies the landing gear system for the ARJ21

Liebherr-Aerospace and HAECO announced the expansion of their ARJ21 landing gear service offer in China. As the popularity of the ARJ21-700 Xiangfeng continues to grow in China, with 100 aircraft in operation and its first customer outside of China in Indonesia, Liebherr-Aerospace and HAECO are collaborating to meet the increased demand for landing gear maintenance services.

This unique partnership combines Liebherr-Aerospace's OEM expertise as the design and product responsible company for the COMAC ARJ21 landing gear system with HAECO Landing Gear Services, a well-established and mature MRO partner with vast experience in landing gear maintenance services. Located in Xiamen, HAECO will work with Liebherr-Aerospace's service center in Shanghai to provide

support to Chengdu Airlines, Genghis Khan Airlines, China Southern Airlines, One-Two-Three Airlines, Air China, Jiangxi Air, China Express Airlines, and TransNusa.

The success of this teaming approach between Liebherr-Aerospace as the OEM and HAECO as the maintenance partner has already been demonstrated by the high-quality services provided to the Embraer E-Jet E1 family fleet operated in China. With the expansion of Liebherr's and HAECO's service offer to ARJ21 operators, both partners aim to support the success of the COMAC ARJ21 program in China and beyond. The landing gear service will also be available for the newly certified ARJ21F cargo version, which will be operated by YTO Cargo Airlines and Longhao Airlines.

To further optimize slot availability for all ARJ21-700 and ARJ21F operators, Liebherr-

Liebherr-Aerospace grows its MRO footprint in China by adding a new chapter to its partnership with HAECO Landing Gear Services. This new MRO capability of landing gear services for the COMAC ARJ21 fleet will add local capacity on the Chinese market.



Christian G. Pinter, Director & GM at HAECO (2nd from left) with Liebherr-Aerospace representatives during his visit at Liebherr-Aerospace in Lindenberg (Germany)

Aerospace plans to expand its landing gear service capacities with its manufacturing partner in China. This new MRO capability will add local capacity to the Chinese market and ensure that operators of the ARJ21 have access to exceptional as well as reliable landing gear maintenance services.

## Bharat Electronics receives Orders worth Rs. 5900 Crore

Bharat Electronics Limited has received Orders worth Rs. 5900 Crore in the financial year 2023-24.

BEL received order for 2 Regiments of Improved Akash Weapon System (AWS) with upgrades from BDL for a value of Rs. 3914 Crore.

Akash is an all-weather, point/area air-defence weapon system intended for defending vulnerable points/areas against threats emanating from low, medium and high altitudes. The system uses high mobility vehicles for mobile application.

The improvements incorporated include high altitude operation,

simultaneous engagement of multiple threats over 360 degrees, missiles fitted with RF Seeker and reduced foot print.

### Other Significant Orders valued at Rs. 1984 Crore

Other significant orders repeated inter-alia include orders for Shakti EW & Sanket MK III (Naval Systems), GBMES & GBVU Com Jammer systems, MKBT systems, IFF-MK-XII Crypto Modules & Up gradation of SDP & Display of Rohini Radar, Training system for CMS P15B & CAMC of CMS for P 28 etc.



## Leonardo, Nexter jointly launch program for new Gun Pod for M-346 Fighter Attack

Leonardo and Nexter, a company of KNDS, have jointly launched a development program aimed to introduce a new Gun Pod on the M-346 Fighter Attack (FA).

After a successful feasibility study, which has demonstrated the capability of adding a Link & Case Recovery (LCR) system to the M-346 FA, Leonardo and Nexter, a company of KNDS, have decided to pursue a joint development effort by integrating a new 20mm cannon pod to the M-346FA.

A 20 mm cannon offers an advantageous solution compared to 12.7 / .50 caliber in terms of range, precision and final effects. The 20M621 weapon solution, easy to integrate, operate and maintain, is a NATO caliber ITAR free solution designed for air application.

As others weapons and systems developed and produced by Nexter for air domain, it is light and offers effectiveness and performance.

Dario Marfè – Senior Vice President

Commercial, CSS&T & Proprietary Programs Business at Leonardo Aircraft said: "Leonardo is strongly convinced that Nexter is the right partner. Nexter's 20 mm gun pod integration will boost combat responsiveness of M-346FA in Homeland Defense, COIN, CAS/Close-In Combat missions, thanks to an ITAR free solution suitable for many customers worldwide".

Philippe Reynes – Head of Weapon Systems and Turrets Programs at Nexter Systems said: We are proud of the relationship of trust we have built up with Leonardo by taking the constraints specific to aerial platforms very seriously. For example, the safety of these platforms is ensured by the fact that our pod recovers all the links and casings after firing. Plus, the NC621 is mechanically harmonised to guarantee maximum precision for the pilot.

Nexter, major actor in the gun firing function in aeronautics domain, is one of the rare suppliers enabled to develop and produce Medium Caliber guns and

ammunitions.

The M-346 FA is a 'light combat' version of the M-346 advanced trainer with multi-role capabilities including close air support missions, even in urban areas, battlespace air interdiction for national defence and tactical reconnaissance.

The M-346 FA maintains all the features of a trainer aircraft with the addition of new generation equipment and sensors, making it an effective operational solution in the light combat role.

The aircraft is equipped with a modern state of art multi-mode radar: a dependable, high-performing solution offering superior accuracy and enabling exceptional system modularity.

The M-346FA is protected by a complete passive defence system (DASS – Defensive Aids Sub-System), while the integrated communication system and tactical datalink (TDL), which may also be integrated in a version compliant with NATO requirements, ensure the highest levels of interoperability.



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## RAFAEL, Diehl & HENSOLDT signed teaming agreement on SPICE 250 ER



RAFAEL Advanced Defense Systems Ltd., Diehl Defence GmbH & Co. KG, and HENSOLDT Sensors GmbH have announced a teaming agreement focused on the modular SPICE™ 250 ER (Extended Range) system. The agreement has been signed by the three parties during Paris Air Show.

Building upon previous successful collaborations, this partnership aims to provide cutting-edge solutions for the German Luftwaffe, featuring unique capabilities and enhancements in specific for the Eurofighter EK and overall LuWES program. The Eurofighter EK program, currently under development, is intended to replace the Tornado Eloka electronic warfare (EW) platforms currently in operation with

the German Luftwaffe. Offering the SPICE 250 ER solution, Diehl Defence is getting one step closer to becoming the German Luftwaffe's prime contractor for airborne ammunition.

This collaboration follows prior agreements between RAFAEL and Diehl Defence on the SPICE Family of munitions. Additionally, RAFAEL's agreement with HENSOLDT in the Electronic Warfare domain, including the highly regarded Sky Shield/ Kalaetron Wideband Electronic Attack and Escort Jamming Pod, further strengthens the expertise and synergy between the parties. The three parties together cover all necessary expertise to answer current and future demands in regard to stand-off and EW capabilities.

RAFAEL's SPICE 250 ER system, derived from the combat-proven SPICE Family of highly automated Human-in-the-loop air-to-surface systems, serves as the foundation for this collaboration. The SPICE 250 ER employs a turbojet engine, enabling it to operate at extended stand-off ranges. Therefore, managing to cope with for example today's long-range Air Defense threats.

With its modularity Spice 250 ER allows for carrying enhanced payloads by replacing the traditional warhead. It now provides Suppression of Enemy Air Defense (SEAD) capabilities. Furthermore, the SPICE 250 ER incorporates standardized electrical and physical interfaces found across the SPICE Family, optimizing platform integration and reducing the life cycle cost.



## NATO awards contract to Leonardo for the RAT 31 DL/M Air Defence Radar



The radar will be operated by the German Air Force, which has two other systems - already in service since early 2010s - that will undergo a midlife-upgrade

Leonardo has been awarded a contract by the NATO Support and Procurement Agency (NSPA) for the supply of a new RAT 31 DL/M long-range deployable air defence radar (DADR). This will be the third Leonardo DADR system to be used by the

Luftwaffe (German Air Force), which has already in service two sensors since the early 2010s. The scope of supply completes also the technological upgrade of the first two German Air Force's RAT 31 DL/M for which other contracts have been recently signed.

Support activities such as logistic studies, training and operational start-up are also included.

It is the first time since the 1990s, NSPA has acquired a complete radar system. The

contract also confirms the field proven support capabilities demonstrated by Leonardo and the Agency.

The RAT31 DL/M is a L-band solid-state 3D surveillance radar, designed to protect large portions of territory thanks to its wide range. The sensor is part of a family of long-range systems with surveillance, air defence, and missile capabilities, including ballistic missiles, in support of homeland security and operational missions. The RAT 31 DL/M can adapt to the challenges posed by a broad range of operational scenarios, including those where it has to face jamming and heavy clutter at the same time. Its highly reliable technology allows for a "graceful degradation", meaning that even if some modules fail, the radar sustains its overall performance.



## Northrop Grumman Opens New Hypersonic Propulsion Systems Manufacturing Facility

Northrop Grumman Corporation (NYSE: NOC) has opened a Hypersonic Capability Center (HCC) in Elkton, Maryland to produce advanced propulsion solutions that can power hypersonic missiles beyond Mach 5.

A factory-of-the-future, the HCC establishes the infrastructure and capacity necessary to cost-effectively produce hypersonic propulsion at scale supporting the U.S. Department of Defense's (DoD) growing demands for long range, rapid response weapons.

The HCC is the first U.S. facility designed specifically for large-scale manufacturing of air-breathing propulsion which includes ramjet and scramjet propulsion.

The facility will support the U.S. Air Force's Hypersonic Attack Cruise Missile development and production and has capacity to support future hypersonic systems work from across DoD.

The HCC features state-of-the-art production technology, implements digital engineering and consolidates engine manufacturing processes, supporting cost reduction and increased production.

Experts:

Jim Kalberer, vice president, missile products, Northrop Grumman: "This is a

pivotal moment for hypersonics weapons; we have moved beyond building and demonstrating propulsion prototypes to large-scale manufacturing. Our proactive investment in this facility establishes the supply chain and optimizes manufacturing processes to produce hypersonic systems affordably at scale."

Kevin Anderson, Maryland Commerce Secretary: "Having Northrop Grumman expand its footprint in Maryland is a testament to our state's thriving aerospace and defense industry. With the addition of this new facility, Cecil County is gaining a first-of-its-kind manufacturing center, as well as a significant number of new jobs. We are incredibly grateful to Northrop Grumman for its continued investment in Maryland."

Northrop Grumman's Hypersonic Capability Center in Elkton, Maryland will manufacture ramjet and scramjet engines for hypersonic weapons. (Photo Credit: Northrop Grumman)

Details on Northrop Grumman's Hypersonics Capability Center:

Northrop Grumman is a leader in hypersonic propulsion, which is part of the company's broad offerings in advanced weapons, including armaments, components,

missiles, electronics and interceptors.

The HCC is Northrop Grumman's latest manufacturing infrastructure expansion to strengthen weapons capacity for the U.S. military and allies. The HCC leverages state of the art metal manufacturing processes and precision non-destructive test technologies to rapidly produce complex assemblies with unmatched quality. These new offerings will also drive opportunities across the region for additional technically skilled high-wage jobs, engineers and other professional roles at the Elkton facility.

The company is also investing in a new missile integration facility at Allegany Ballistics Laboratory in West Virginia for production of advanced defense and strike missiles, as well as expanding and optimizing solid rocket motor production at its facility in Promontory, Utah.

Northrop Grumman is a leading global aerospace and defense technology company. Our pioneering solutions equip our customers with the capabilities needed to connect and protect the world, and push the boundaries of human exploration across the universe. Driven by a shared purpose to solve our customers' toughest problems, our 95,000 employees define possible every day.



## THE MAINSTAY OF INDIAN AIR FORCE

### Light Combat Aircraft Tejas Completes Seven Years of Service in IAF



**On the occasion of India's indigenously designed and built Light Combat Aircraft (LCA) Tejas having completed seven years of service in the Indian Air Force, the Ministry of Defence has proudly announced that the aircraft and its future variants will form the mainstay of the IAF in the years to come. The confidence that the IAF reposes in the Tejas is borne by its order for 83 LCA Mk-1A which will have updated avionics, as well as an Active Electronically Steered Radar, updated Electronic Warfare suite and a Beyond Visual Range missile capability. All eyes are now on the delivery of 83 Mark-1A delivery, which is expected to begin in February 2024.**

**The occasion also points at the need of faster pace in the production of fighter jet in the country and the prospects of exports.**

Marking a major milestone in its success journey, the indigenous Light Combat Aircraft (LCA) completed seven years of service in the Indian Air Force (IAF) on July 1. Christened Tejas in 2003, the aircraft is a multi-role platform that ranks amongst the best in its class. The Ministry of Defence has proudly announced that, the LCA and its future variants will form the mainstay of the IAF in the years to come. With the IAF expecting the delivery of the Mark-1A delivery of the LCA by February, it goes without saying that the LCA's association with the Indian Armed Forces has only begun.

The first IAF squadron to induct the Tejas was No 45 squadron, the 'Flying Daggers'.

Over these years, the 'Flying Daggers' has progressed from Vampires to Gnats and then onto the MiG-21 Bisos, before being equipped with its current steed. Each of the aircraft flown by the Flying Daggers has been manufactured in India -- either under license production or having been designed and developed in India. In May 2020, No 18 Squadron became the second IAF unit to operate the Tejas.

The LCA has been designed to undertake the Air Defence, Maritime Reconnaissance and Strike roles. The inherently unstable Tejas offers carefree handling and enhanced manoeuvrability. This capability is further enhanced with its Multi-Mode Airborne radar, Helmet Mounted Display, Self-protection suite and Laser Designation Pod.

The IAF has showcased India's indigenous





aerospace capabilities by displaying the aircraft at various international events, including LIMA-2019 at Malaysia, Dubai Air Show-2021, Sri Lanka Air Force anniversary celebrations in 2021, Singapore Air Show-2022 and Aero India Shows from 2017 to 2023. Whilst it had already participated in exercises with foreign air forces domestically, Ex-Desert Flag in the United Arab Emirates in March 2023 was the Tejas' maiden exercise on foreign soil.

The confidence that the IAF reposes in the Tejas is borne by its order for 83 LCA Mk-1A which will have updated avionics, as well as an Active Electronically Steered Radar, updated Electronic Warfare suite and a Beyond Visual Range missile capability. The new variant will be capable of firing a plethora of weapons from increased stand-off ranges. Many of these weapons will be of indigenous origin. The LCA MK-1A will see a substantial increase in the overall indigenous



content of the aircraft.

**Need for Faster Production of the Aircraft**

Even though the contracted deliveries of the LCA MK-1A are expected to commence in February 2024, key questions remain on the speed of production of jets by Hindustan Aeronautics Limited (HAL), the manufacturer of the aircraft.

The IAF presently has 32 squadrons of fighter jets against the 42 needed to tackle a collusive two-front threat against Pakistan and China. Over the next two-three years, all four squadrons of the Soviet-era MiG-21 fighter jets will retire. The IAF's Jaguar, MiG-29 and Mirage 2000 jet fleets — all inducted in phases during the 1980s — are slated to retire in batches beyond 2029-30. So around 250 of these four types of jets are operating on an extended lifecycle.

India has to produce 480 fighter jets on its own in the coming 15 years. While 380 aircraft are for the IAF and 100 twin-engine jets for the Navy. The pace of production of these jets will define country's military

readiness and self-reliance.

The IAF ordered 20 planes under a Rs 2,813-crore contract in 2006 and another 20 under a Rs 5,989- crore agreement in December 2010. However, the delivery of all 40 aircraft, which was to be done by December 2016, was completed in February this year — seven years behind schedule.

After HAL opened up a new production facility at Nashik, the annual production capacity of HAL is up to 24 jets. In order to meet the target of 480 jets, the production capacity has to be enhanced to 40 jets per annum, which is challenging but not impossible.



The commencement of the deliveries of the 83 LCA Mark-1A aircraft in February 2024 is expected to be followed by 120 Tejas Mark-2 jets, 126 jets of the advanced medium combat aircraft and 100 twin-engine deck-based fighters for the Navy. Another order of 50 jets of Tejas Mark-1A, beyond the 83 ordered, is also expected.

**Push for Exports**

India is in advanced talks with both Argentina and Egypt for the sale of at least 35 Tejas Mk-1A indigenous fighter aircraft. The deal with Egypt will also include setting up a Maintenance, Repair and Overhaul (MRO) facility there. Besides Egypt, Argentina, Australia, Indonesia, and the Philippines are among the countries showing keen interest in procuring Tejas aircraft. Argentina is looking to acquire at least 15 aircraft.

Though Malaysia, which considered Tejas, South Korean FA-50 light attack aircraft have outplayed India's Tejas fighter jets as Seoul inked a deal to export 18 Lead-in-Trainer-Light Combat Aircraft (FLIT-LCA) to the South East Asian nation due to geopolitical reasons in the region.

The silver lining is the growing defence export from India. The acceptance of Indian defence equipment is growing and what remains to be seen is the acceptance of the bigger military platforms and systems. LCA can play a big role in it and the authorities have to 'seize the opportunity'.

## BEL registers a growth of 23% for 1st Quarter of FY 2023-24

**N**avratna Defence PSU Bharat Electronics Limited (BEL) has achieved a Turnover of Rs.3446.69 Crore, registering a growth of 12.51% during the 1st Quarter of FY 2023-24 over the Turnover of Rs. 3063.58 Crore recorded in the corresponding period of the previous year. Profit Before Tax

(PBT) during the 1st Quarter of FY 2023-24 stood at Rs. 703.75Crore, registering a growth of 21.73% over the Profit Before Tax (PBT) of Rs.578.10 Crore recorded in the corresponding period of the previous year.

Profit After Tax (PAT) during the 1st Quarter of FY 2023-24 stood at Rs. 530.84

Crore, registering a growth of 23.02% over the Profit After Tax (PAT) of Rs.431.49 Crore recorded in the corresponding period of the previous year.

The order book position of the company as on 1st July, 2023 stood at Rs. 65356 Crore.

## Argentina Defence Minister Visits HAL, Lol Signed for Light & Medium Utility Helicopters



**H**AL and the Ministry of Defence of the Republic of Argentina have signed a Letter of Intent (LoI) on productive cooperation and acquisition of Light and Medium Utility Helicopters for the armed forces of the Argentine Republic. The LoI was signed by Jorge Taiana, Argentinian Defence Minister and C B Ananthkrishnan, CMD, HAL in the presence of Francisco Cafiero, Secretary of International Affairs, Ambassador Hugo Javier Gobbi, Ambassador Dinesh Bhatia and other senior officers from Argentinian side and HAL.

The Argentinian Defence Minister remarked that the day was interesting and a step on the road to an ever growing and strong collaboration with HAL. CMD HAL and other senior officers of HAL briefed the visiting dignitaries on various activities of HAL and a presentation was made on the occasion.

During the day-long program, the Argentinian Defence Minister and his team viewed the flying display of various HAL products at HAL Airport. The team also paid a visit to LCA, Helicopter Divisions and evinced keen interest in HAL products.

## IAI' DS-SAR satellite entered Earth orbit in space

**T**he DS-SAR radar satellite, developed and produced by IAI, was successfully launched into space on a PSLV-C56 (Polar Satellite Launch Vehicle) rocket, from the launch site SDSC SHAR Sriharikota, India. In line with the original launch program, the satellite entered its orbit around the Earth, began transmitting data, and underwent a series of preliminary performance tests,

conducted by IAI's engineers, who validated the correct functioning and performance level of the systems. While in orbit, the satellite will begin a preplanned series of tests, and following their completion, will be formally handed over to its Singaporean customers DSTA and ST Electronics.

The DS-SAR satellite was developed based on the experience accumulated by IAI in

developing a series of advanced observation satellites: OptSat and TecSAR, which are launched into space, in new generations, since 1988. The SAR sensor payload enables the collection of a wide range of data, in terms of both coverage and resolution, day and night, and under all weather conditions.



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