



Hawk delivery proves 'Made in Saudi' capability

FINAL FRONTIER

Saudi Arabia's ability to assemble complex combat air platforms was demonstrated by the delivery of the last of 22 locally assembled BAE Systems Hawk Mk.165s – which included thousands of locally manufactured parts.

This promises to strengthen the Kingdom's credentials when it comes to the manufacture of more advanced aircraft types, perhaps including participation in a sixth generation fighter for the RSAF.

HRH Prince Khalid bin Salman bin Abdulaziz, Saudi Minister of Defense, oversaw the inauguration of the last Hawk Mk.165 Advanced Jet Trainer (AJT) aircraft.

The aircraft was the last of 22 that have been assembled entirely in the Kingdom, using more than 3,114 parts assembled by 25 local companies.

In-country completion

When Saudi Arabia ordered its second batch of Hawk Mk 165 AJT aircraft in February 2015, it was specified that these aircraft would be completed in-country, using a new Hawk In Kingdom Final Assembly (Hawk IKFA) line established in the former Tornado Programme Depth Maintenance Upgrade (TPDMU) facility at Dhahran.

The Hawks were delivered as major sub-assemblies, consisting of the fuselage, wing, tailplane, and fin and were then assembled for the first time to become a

complete aircraft, before being tested, flown, painted and delivered to the RSAF.

More than 70% of personnel in the IKFA facility are Saudi nation-

als and the Hawk assembly facility was created with the support of the Saudi partner companies, with many more benefiting across the supply chain.

During the in-Kingdom final assembly programme, the proportion of local employees went from 77% on the first aircraft, to more than 90% on the final Hawk. ▲



RSAF's Hawk couture

The RSAF's Saudi Hawks team unveiled a stunning new look at the show this week with HRH Prince Khalid bin Salman bin Abdulaziz, Minister of Defence, unveiling a striking new livery.

The new livery retains the teams green and white colours, but this now features a hawk's head on the forward fuselage. There may be some further 'tweaks' to the scheme,

said Mohammed Malik, of BAE Systems, who described himself as the 'chief painter'!

Ten of the 22 locally-assembled BAE Hawk 165s (of 44 Hawks ordered in 2012) will be transferred to the Saudi Hawks team to replace the teams ageing Hawk Mk 65As. The team made its debut in January 1999 at Riyadh as part of Saudi Arabia's 100th anniversary celebrations.

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T-7 simulator offers fast-jet experience

With Boeing's new T-7 advanced jet trainer in flight testing, show-goers can try their hand at flying it on the simulator located on the Boeing stand.

Boeing was selected by the US Air Force in 2018 to manufacture 351 of the jets. Ray Handy, senior manager, T-7 business development, said five examples have now been built and "are now entering their flight test phase." Boeing expects to deliver the first aircraft to the USAF in 2026.

"The air force recognised the T-38 was coming out of service and they needed to find a new

aircraft that can actually train to fit future generation aircraft. You have to train before you can fight – and the T-7 can do that," said Handy.

Under the programme, up to 46 simulators will be produced and delivered to the USAF at five training bases. The simulator allows embedded training that matches the actual aircraft.

Said Handy: (pictured right, demonstrating the simulator) "It has one-push software where the software is concurrent with the aircraft and simulator."

"The instructor sits at the back and can see what the student is doing at the front and can



control challenges while the student is unaware, such as 'bandits' coming up, and seeing how the trainee copes."



Saudi Forces reveal Patriot high-speed response against Houthi attacks

A Saudi Patriot battery shot down six Houthi ballistic missiles in 48 seconds in a dramatic illustration of the rapid experience that has been garnered by the country's armed forces, writes Tony Osborne. The Royal Saudi Air Defense Forces (RAFF) 290th Patriot unit was protecting the city of Jazan near the Yemeni border on 26 August 2019, when Houthis fired a swarm of ballistic missiles which threatened civilian areas.

In an engagement which officials say has now become legendary within the service, battery commanders launched an undisclosed number of Patriots to intercept the incoming missiles, with one missile being launched every six seconds.

The engagement is one of several now being formally acknowledged by RAFF officials here at WDS.

In another incident, the same unit also engaged a ballistic missile that threatened commercial airline flights at Jazan airport.

The RAFF deployed numerous systems to the

Yemeni border during the conflict with the Iran-backed Houthi militants in Yemen to tackle the cross-border air defence threats.

During the conflict, the Houthis were supplied with numerous ballistic and cruise missile systems as well as uncrewed air systems (UAS) which were launched against Saudi Arabia and the UAE. The Houthi targeted attacks were largely against civilian areas and critical infrastructure.

Statements by the Saudi-led coalition at the time, as well as by the Saudi ambassador to the US, state that Houthi rebels had launched almost 400 ballistic missiles and more than 800 one-way attack UASs into Saudi Arabia between 2015 and 2022.

Other incidents being acknowledged by the service include the first hard-kill engagement of a one-way attack drone by the Chinese-supplied truck-mounted Silent Hunter system using its onboard laser, while the air defence forces also engaged 31 one-way attack drones using the Rheinmetall Skyguard air defence gun system in a single day.

◀ Patriot batteries are proving a success to countering Houthi attacks as revealed yesterday – the Patriot missile is on show at the RTX stand



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Director of Content Alan Peaford
alan.peaford@informa.com

Distribution Ethan Cobbing

Managing Editor Mark Pilling

Editorial Sam Basch (Land), Alan Dron (Sea), Jon Lake, Tony Osborne, Alan Warnes (Air)

Online News Editor

Marcelle Nethersole

Picture Editor James Robbins

Photography Tom Gordon, Jeff Holmes

Design & Production Amelia Clark

Distribution Ethan Cobbing

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Publisher Mark Brown

mark.brown@aviationweek.com

Marketing & Circulation

clare.brown@informa.com

Display Advertising

grant.lee@informa.com



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FNSS aims for full-spectrum battlefield dominance



With the unveiling of the Pars Alpha 8x8 new generation armoured fighting vehicle (AFV) at WDS, Turkish manufacturer FNSS (Hall 1 stand A5) launched an impressive system with equally impressive capabilities.

Built for full-spectrum dominance on the battlefield, the 8x8 vehicle incorporates state-of-the-art platform design and technologies.

"The Pars Alpha 8x8 represents a leap forward in armoured vehicle technology," said Nail Kurt, chief executive of FNSS.

"Being committed to innovation and understanding of the modern combat environment, we designed this vehicle to empower armies around the world with superior armoured combat capabilities."

Designed to operate in all weather conditions, the Pars Alpha 8x8 boasts all-wheel drive, ride-height control and an all-axle steering system offering advanced mobility.

The hydropneumatic suspension with adjustable ride-height enables persistent cross-country agility. This is further enhanced by a turning radius optimised for



confined urban warfare.

With a road speed exceeding 115 km/h and an operational range of more than 800km, the Pars Alpha ensures sustained vehicle mobility even with tyre and/or wheel loss, thus keeping missions on track. FNSS said its range of 5,000km of cross-country and on-road drive

without any need for field maintenance underscores its extended operational endurance.

This next-gen vehicle boasts advanced protection systems to counter mines, IEDs, KE threats and artillery projectiles. Mine blast attenuation seats, and positioning the driver and commander above

the second axle behind the power pack compartment, reinforce crew safety against high levels of threats from all around the vehicle.

A gunshot detection system, laser warning, soft-kill and hard-kill active protection systems can also be integrated based on user requirements.

The Pars Alpha incorporates positive pressure and face mask CBRN defence measures by providing a sealed environment within the vehicle. This feature prevents toxic contaminants, enabling crew members to survive and maintain combat efficiency even when the outside environment is hazardous and lethal.

Among weapon systems that can be integrated is the Teber-II 30/40 remote-controlled turret (RCT) fitted with a 30mm dual feed automatic cannon. The 30mm cannon can be replaced with a 40mm barrel, by changing only the recoil spring and forward feeder.

The Pars Alpha 8x8 vehicle is transportable on highways, railways and compatible with a fleet of strategic airlifters such as the Airbus A400M, Boeing C-17 Globemaster, Lockheed C-5 Galaxy, Antonov An-124 and Ilyushin Il-76.

North Americans present united front at WDS

The USA and Canada are standing strong together at the North American pavilion, with both countries' ambassadors officially opening the pavilion yesterday.

"The USA has 108 companies here at WDS, both big and small, including new to this market," said Michael Ratney, US ambassador for Saudi Arabia. "Both the USA and Canada are proud to join our ventures together

and represent some of the major players in this defence market in the Middle East – a truly global market."

Jean-Philippe Linteau, Canadian ambassador to Saudi Arabia, said: "This is an exciting time to see Saudi Arabia defence, as the country grows. Canada and Saudi Arabia normalised relations eight months ago, and the relationship is growing well. Canada and the US are working

together on this pavilion – we make things together."

Linteau said Canada and the US in 2022 had the biggest trading relationship of any two countries in the world, valued at more than \$900 billion in goods and services. "This is the kind of relationship we have. When Canada exports to the US, 80% of what we export makes it into 'other stuff', so it's really about our supply chains being integrated, and that's true for the defence industry."

He added: "I know there are 20 Canadian companies here, and most often we will be making things together with our US partners. So, as things pick up, as things move up between Canada and Saudi Arabia – we want to work together."

From left: Nomaan Syed of the American Chamber of Commerce Saudi Arabia, Canadian ambassador Jean-Philippe Linteau, US ambassador Michael Ratney and William Foster Jr of Jones Group International



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Pakistanis put new JF-17C on show

The Pakistan air force is showing off a brand-new Chengdu JF-17C at WDS, just three months after it made its public debut at the Dubai airshow.

The jet appearing in the static display is operated by 16 Sqn 'Black Panthers' located at PAF Base Minhas, the first unit to be re-equipped with the JF-17C. A second squadron is believed to have now re-equipped in the south of the country.

With all the new systems and weapons that are being added, the new Block 3 elevates the Pak-Sino-designed jet into a new sphere.

The biggest upgrade is the Nanjing KLJ-7A active electronically scanned array (AESA) radar, which comes with

a new avionics suite that includes a wide angle head-up display (HUD) in the cockpit and a new Chinese helmet-mounted display sight.

For self-protection there is also an embedded Chinese electronic countermeasures (ECM) system.

A new integrated Klimov RD-93MA powerplant will provide an extra 5,000lbs of thrust, giving that extra power that will also eliminate the black smoke often appearing when the jet accelerates.

Another area where the JF-17C has seen considerably enhanced is the weapons load, with the increase to four weapons stations under each wing with one of them courtesy of a twin-rack, allowing it to carry two missiles.



There is an additional station under the central fuselage, and a chin-mounted hard point that houses the Turkish Aselsan Aselpod targeting pod. New Chinese missiles are also being integrated that will be matched by the range of the new KLJ-7A radar.

With all 30 new JF-17C Block 3s to be delivered soon, attention will focus on the upgrade of the 50 Block 2s with new avionics, but the 50 Block 1s will remain as they are.

The JF-17C from 16 Sqn 'Black Panthers' is making its second public appearance outside Pakistan. The unit is currently participating in a big air exercise with the Royal Saudi Air Force and other international partners



NEWS IN BRIEF

Taurus looks to expand small arms business

Brazilian small arms manufacturer Taurus has signed a memorandum of understanding (MoU) with Saudi Arabia's Scopa Industries to examine the possibility of setting up a manufacturing facility in the Kingdom. Scopa Industries is involved in a wide range of air, sea and land systems.

Taurus has had its regional headquarters in Saudi Arabia for some time and already supplies pistols, revolvers and lever-action rifles for the civilian market here. Under the MoU, the companies will discuss the establishment of a joint venture for the design, manufacturing, assembly and testing of weapons.

The joint venture will enable Taurus to better understand the needs and requirements of the Saudi market, said Rodolfo Romero, general manager of Taurus Saudi Arabia.

A third from First Win

Thailand based Chaiseri (Hall 1 Stand E27) is showcasing its capabilities this week, including the 3rd generation of their proven First Win armoured vehicle family. The First Win AFV features a mine-protected monocoque hull, powerful 330hp engine with automatic transmission, and heavy duty independent suspension. It boasts a selectable axle differential lock at front and rear.

Advanced Protection Systems closes on Saudi partner

Polish anti-drone system developer Advanced Protection Systems (APS) is in "advanced discussions with possible partners in Saudi Arabia" as it seeks to "embark on an adventure that will thrive" in the Kingdom, said Radoslaw Piesiewicz, APS chief operating officer and co-founder.

The initial aim is to deliver technology to the country that responds to immediate drone security threats, followed by the delivery of knowhow, then the capacity to build its systems locally and also undertaking servicing and training support, said Piesiewicz.

"APS has anti-drone technology developed

over years that is proven on the battlefield in Ukraine and used by NATO militaries," he noted. Its FIELDCtrl radar for detecting small flying objects is also in service with the Saudi Arabian, Qatari and UAE armed forces.

At WDS, it is showing off its new Ultra Precise 3D multiple input/multiple output (MIMO) long-range radar that can detect Class 1 micro-drones at a range of 6-8km, compared to the 3-5km of previous-generation radars.

APS is in "advanced discussions with possible partners in Saudi Arabia," said Radoslaw Piesiewicz, chief operating officer and co-founder





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Rocketman: Pakistan's top army commander unveils new MLRS

Pakistan's new Fatah-II multi-launched rocket system (MLRS) was unveiled at the Global Industrial Defence Solutions (GIDS) stands on Sunday by the country's top military man, Gen Sahir Shamshad Mirza.

Fatah-II was successfully test-launched in Pakistan on 27 December and is intended to diversify Pakistan's conventional targeting options. They will undoubtedly be focussed on precision strikes, deep into enemy territory, with various types of conventional warheads.

Although publicly stated to have a range of around 290km, some believe it to be nearer to 400km, considerably further than the earlier Fatah-I system's official range of more than 150km.

The two MLRS systems have been developed by GIDS to attack military bases, missile launch sites, large concentrations of troops, large air bases, harbours and other important facilities. Fatah-II joins the likes of the US Army's M142 high mobility artillery rocket system (HIMARS) in the MLRS category, currently being used to defend the Ukraine against Russia.

Minutes after he cut the ribbon to mark the pulling back of the cover from the Fatah-II rocket at the GIDS stand, Gen Mirza, Chairman Joint Chiefs of Staff Committee, spoke exclusively to *Show Business* about the new system. "I'm proud to be here at the stand of GIDS, the

showcase of the Pakistan defence businesses that are doing so well defending the country. As the threat continues to evolve in the region, Fatah-II will conserve the purpose of our conventional needs.

"The army has already ordered it and, with serial production of Fatah-I under way, we will

start serial production of Fatah-II in the next few months. We hope to have the first new system operational within a year or so."

The four-star general was attending WDS to support the export marketing efforts of Fatah-II and the other products on show at the GIDS stand.



▲
Gen Sahir Shamshad Mirza, Chairman Joint Chief of Staff Committee, walks around the GIDS stand after the Fatah-II unveiling

Turks delight in uncrewed vessels

In the increasing trend towards uncrewed vessels, Turkish company Ares is offering both defensive and offensive options.

The company regards the vessels as ideal for port security and has created the 11m Ulaq 11 PSV for this role, but is also

developing the slightly larger Ulaq 12, which can be used for anti-surface warfare tasks with its missile armament and 7.62mm or 12.7mm remote weapons station.

The prototype of the Ulaq 12 is being built at present and the Turkish navy is buying one for tests and to work out a concept of operations for the type.

The vessel can be controlled on shore by an operator, with an officer overseeing him, or a route can be drawn in advance and the vessel will follow it autonomously.

Ares is also developing the Ulaq Kama, a 'suicide drone' that can carry a 200kg explosive payload for actions against hostile vessels. Manufacturing of the first unit is almost completed.



▲
The Ulaq Kama built for action against hostile vessels is on show here

Defence from Africa

Nigeria's Proforce (Hall 1 stand G3.3), the only total defence provider in West Africa, is showing its capabilities at WDS. Incorporated in 2008 as a subsidiary of O'la-Kleen Holdings, Proforce is Nigeria's first indigenous defence and security manufacturing company. With facilities located in Nigeria, Dubai and India, Proforce leveraged research and deep technical know-how to produce and develop products for the domestic and international markets, including the governments of Chad and Rwanda. The company has recently provided Ghana with cash-in-transit vehicles which incorporate the latest in materials and technologies. These include ballistic resistance, run-flat tyre systems, advanced suspension and secure communications.

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Boosting KSA ambitions high on Airbus division wish list

Saudi Arabia's economic power and geopolitical influence makes it a "core country" for Airbus Defence and Space, in the view of its chief executive, Michael Schoellhorn.

Schoellhorn said his division of the European OEM sees the Kingdom as much more than simply a source of business. "We want to contribute to the development of the country," he said.

"Aviation is at the forefront of technology, so I think we have a lot to offer, in terms of education, the creation of jobs, helping Saudi Arabia to prosper."

Schoellhorn highlighted the Airbus Foundation's Little Engineer science, technology, engineering and mathematics (STEM) education programme,

and said one-third of the 300 Airbus Defence and Space personnel in Saudi Arabia are Saudi nationals.

The Defence and Space division has a number of platforms in service in the region, including 45 CN-235 and C295 light/medium transports (including four C295s in Saudi Arabia); 136 Eurofighter Typhoons, 72 of which were delivered to the Royal Saudi Air Force; and 11 A330 MRTTs, of which eight are in Saudi Arabia.

Schoellhorn said the A330 MRTT was the world's most advanced tanker, a leader in the development and deployment of automatic air-to-air refuelling and the automatic refuelling of autonomous unmanned systems.

Looking forward, Schoellhorn

acknowledged that Airbus Defence and Space was in discussions about the delivery of A400M transport aircraft and C295MPA maritime patrol aircraft to Saudi Arabia.

Since the end of McDonnell Douglas/Boeing C-17 production, the A400M is the world's only in-production strategic military transport aircraft, and Schoellhorn said the aircraft had "good traction" in Saudi Arabia, with interest from the RSAF in the type.

He said the C295MPA was "early in the race", but added that it offered more scope for local partnerships and participation than some competitors, while its capabilities were a good match for any operator trying to build up its maritime patrol and anti-submarine (MPA/ASW) capabilities.

▶ Michael Schoellhorn, chief executive of Airbus Defence and Space



Saudia Technic teams up with Embraer

Saudia Technic and Embraer Services and Support signed an MoU at the show yesterday to collaborate in maintenance and training. The agreement aims to enhance cooperation in commercial aviation, with a focus on the E2 jets family and executive aviation maintenance.

Saudia Technic chief executive Fahd Cynndy said during the signing: "Through this MoU, we embark on a journey of collaboration and growth. The aerospace industry in Saudi Arabia is thriving, and together with Embraer Services and Support, we are poised to make remarkable advancements. This partnership will propel us towards new horizons, shaping the future of commercial aviation and paving the way for excellence in maintenance."

Embraer Services and Support president and CEO, Carlos Naufel said: "The Kingdom of Saudi Arabia has one of the fastest-growing aerospace industries worldwide, and Embraer Services and Support is well-positioned to advance in the region by working in partnership with Saudia Technic."

Lockheed Martin awards THAAD Saudi deals



▶ MEPC's Mohammed Alnawakhani presents Tim Cahill, Lockheed Martin Missiles and Fire Control Division president, a commemorative plaque to mark their partnership

Lockheed Martin has awarded two key subcontracts to industry in the Kingdom of Saudi Arabia for a second source for certain components in the terminal high altitude area defense (THAAD) weapon system under a localisation agreement with the Kingdom.

The awards support the project approvals announced by GAMI during WDS 2022 to localise the manufacture of THAAD interceptor canisters and THAAD missile round pallets in-country.

Lockheed Martin said these

subcontracts will enhance manufacturing capabilities in the Kingdom and transfer expertise to strengthen the country's defence industry.

The prime partners receiving subcontracts include Riyadh-based Middle East Propulsion Company (MEPC), and Jeddah-based Arabian International Company for Steel Structures (AIC). A number of other Saudi industry partners have also received subcontracts in support of these efforts.

Localisation of work, a

key condition of the THAAD procurement, aligns with the priorities outlined in Saudi Vision 2030.

"Our localisation efforts in the Kingdom are progressing," said Joseph Rank, chief executive for Lockheed Martin in Saudi Arabia and Africa, "and we're proud to see that MEPC, AIC Steel and other Saudi partners are now ready to engage in manufacturing and supporting key components of the THAAD weapon system. It's a significant milestone."



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USSF promotes 'competitive endurance' in last frontier

"It's the new frontier and if we were ever to have a global conflict it's going to start in space and cyber, so you have to understand it and work together to combat any threat."

With those words, Tina 'T2' Timmerman of the US Space Force (USSF), kicked off the inaugural space session at WDS

yesterday in the Defense Space Theatre.

Taking the theme of 'changes in the space domain', Timmerman outlined how the US strategy to create the USSF in 2019 was in response to the rapid rise in space payload launches, coupled with increasing sophistication of the capabilities of the satellites and

devices launched.

Ch MSgt Timmerman is a key player in US space strategy as the senior enlisted advisor to Lt Gen DeAnna Burt, the chief operations officer at the Pentagon with responsibility for operations, sustainment, cyber, and nuclear operations of the USSF.

With the necessity to "look

at space differently", the USSF strategy is based around a concept called "competitive endurance", said Timmerman. "The goal is to ensure adversaries are never desperate enough or emboldened enough to pursue destructive combat operations in space.

"It means we must have the ability to endure through competition that is a preferable state instead of crisis or conflict. It seeks to build on a foundation for the safety, stability and security and long-term sustainment of space.

"Most of all, it seeks partnership and cooperation," added Timmerman. "Competitive endurance relies on our ability to build a coalition to uphold the strength of a rule-based international space order."

Timmerman explained how the JSSF is already working in partnership with several countries, such as Australia, Japan, Norway and the UK, to foster such an order-based system for space.

"We must encourage like-minded nations to support the tenants [of the USSF strategy] and join us in confronting nations that choose to act in an irresponsible way."



FINAL FRONTIER

Global cooperation is essential to build a strong, rule-based international space order, said the USSF's Tina Timmerman

Orienspace blasts off with first satellites into LEO

Orienspace, a privately-owned Chinese start-up formed in 2020, lands at WDS with its first successful mission completed on 11 January 2024 when a Gravity-1 rocket launched three satellites into low earth orbit (LEO).

"Orienspace is at WDS looking for international opportunities for our launch vehicles," said Julianne Zheng, head of International Business Department, Orienspace. There is a growing need for satellite launch capacity worldwide and Orienspace is offering its Gravity-1 and the larger Gravity-2 for these missions, she said.

"Compared to others our launch price is competitive and we can

offer a reliable launch vehicle to the global market."

The Gravity-1, which the firm claims is the world's largest solid propellant launch vehicle, can deliver a 6.5t payload to LEO.

Orienspace has orders for 10 missions which were booked before the first launch, said Zheng. There will be two further Gravity-1 launches this year in Q3 and Q4.

The company is readying the larger Gravity-2 launcher for first flight in 2025. This launcher has a LEO payload of 16.7t. It will be powered by a liquid-propellant engine called Force-85 being developed by Orienspace.

There are also plans to develop



Orienspace's Julianne Zheng said the maiden Gravity-1 flight was ship-launched on 11 January off the coast of Haiyang in Shandong province

the even larger Gravity-3, which will have an LEO payload of 30.5t, with its maiden flight planned for 2027.

Orienspace has raised \$240 million from Chinese and international investors to develop the Gravity launcher range, said Zheng. The company highlights

the fact that it gained full launcher insurance for the 11 January flight from the Lloyd's of London market. She added: "This is a unique achievement for Orienspace as this is normally only achieved for the third mission [of a start-up launcher]."

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MARRS to expand critical infrastructure security system

MARRS, a global leader in security solutions, will deliver and commission up to 40 of its RADiRguard high security surveillance units for a critical infrastructure site, as part of a \$5.5 million contract announced at WDS.

This latest phase builds on a multi-year programme delivered by MARRS since 2018 at the same site.

The high-level perimeter and border security system has been designed to combat cyber and physical threats evolving globally.

With areas of the Middle East particularly prone to such attacks, it's not surprising that the Riyadh office of UK-headquartered MARRS, set up in 2019, is now the company's second-largest office.

Nabil Borhanu, chairman and group managing director, said: "We have been employing locals and working on many different projects in the Middle East. There is a big demand in the region for the type of service we deliver. Our primary product is NiDAR and it has proven to be one of the most effective counter-UAV systems."

Speaking of the technology, Fahad Alayadhi, MARRS senior project manager, said: "RADiRguard provides an invisible fence. Anything entering this site will be detected, identified and classified in real time by MARRS' NiDAR platform. This allows the operator to choose the most appropriate



IN DEMAND

MARRS chairman Nabil Alnoor Borhanu is looking to grow the MARRS office in Saudi Arabia and establish relationships with more countries in the Middle East

response, with NiDAR even able to recommend the best recourse for the detected threat."

RADiRguard provides 24/7 autonomous monitoring, detection, tracking and decision support at the likes of government buildings, landmarks, military bases or national borders.

Under the new contract, MARRS will manage the integration of new RADiRguard units with its existing systems and other legacy sensors, alongside its

NiDAR platform. The installation phase, scheduled for 2024, follows a year of designing and refining the project to meet the latest set of requirements, including a need for flexibility, scalability, adaptability and efficiency.

Fully integrated with MARRS' sensor-agnostic NiDAR platform, this system will significantly reduce the burden on operators by consolidating all sensor data onto a single screen. The company claims this streamlined approach will allow a

single security member to effectively monitor the entire system, as well as coordinate any response to potential threats.

Alayadhi added: "The project has been made possible because of the passion of the MARRS team from its regional headquarters in the KSA. No other organisation is able to deliver and commission security solutions, at the speed and quality needed, to protect critical sites, bases and borders from persistent, ever-evolving threats."

Turkey's TAIS Shipyards buoyed by replenishment tanker delivery

Turkey's TAIS Shipyards comes to the show having just delivered a major new unit to the Turkish navy.

Replenishment tanker TCG Derya was handed over two weeks

ago. The 200m, 27,000-tonne vessel is the second-largest in the fleet, with only the helicopter carrier Anadolu exceeding it in size.

The vessel, which was built in

Sefine Shipyard, part of the TAIS Shipyards group, can make more than 24kts, allowing it to keep up with combat units.

It is capable of conducting three replenishments at sea (RAS) simultaneously – one on each beam and another astern.

Derya can carry 36 standard containers to allow it to undertake a variety of naval missions, as well as humanitarian operations.

The replenishment vessel will

have a force multiplier effect, allowing warships to stay on station longer, rather than having to return to their home ports for supplies.

The vessel, however, is likely to be a single unit. "Most countries are interested in something smaller," said Serdar Ümit Tezeren, TAIS Shipyards' business development manager.

The Derya has a powerplant that combines gas turbines, diesels and electric motors, making it more complex than some navies may wish to handle.



Replenishment tanker Derya is here but the real thing is at sea

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Orpheus engine demo showcases Rolls-Royce capabilities

Rolls-Royce is at the show with its demo Orpheus engine which it said highlights the company's ability to work at speed for the small engine family.

Orpheus will provide pioneering capability solutions for a broad range of future defence markets.

"In just two years, we have developed two different small engine designs," said Alex Zino, director future projects, Rolls-Royce Defence.

"The two experimental engines have been designed, manufactured and successfully tested, demonstrating the capability required to deliver a new family of scalable and configurable small engines within these unprecedented timeframes. These assets will be instrumental in informing critical technology developments for our partners, enabling rapid de-risking of new and novel technologies to enhance their military capability."



Alex Zino, director future projects Rolls-Royce Defence with the demo Orpheus Engine

New MEMR interceptor launch order 'imminent'

Middle East Maritime Repair (MEMR) expects an order "very soon" for its new long-range interceptor design from Saudi Arabia's Ministry of the Interior.

The 28m interceptor is powered by three MTU diesels, delivering their output to two waterjets, although customers can specify different engines. The aluminium-constructed vessel can attain speeds of up to 50kts (46kts at full load) and has a range of 800nm. It will have a crew of seven and endurance of up to seven days.

The model shown on the stand of Riyadh-based MEMR sports a 20mm remotely controlled cannon installation, plus two machine guns.

Specifications for the vessel have been agreed with the ministry and the order, for an unspecified number of vessels, is expected imminently.

MEMR is also showing a model of a new design of an 18m short-range patrol boat capable of 55kts

and with a range of 330nm. It will have a crew of four.

Also prominent on the company's stand is a concept design for a missile-armed patrol boat for the Royal Saudi Navy, the 58m PGG58. The navy already has a similar type in service, but MEMR approached the service with the design that the company says offers

more facilities that the service may require.

The model shows an armament of four unspecified anti-ship missiles, a 76mm cannon plus two smaller cannons and an aft flightdeck for an uncrewed aerial vehicle. The 58m vessel would have a displacement of 1,800 tons and have a speed of 26kts.



The 28m interceptor model shown on the MEMR stand sports a 20mm remotely controlled cannon installation, plus two machine guns

▲ NEWS IN BRIEF

Milanion, Avibras join forces for Middle East push

The UK's Milanion NTGS and Brazil's Avibras Indústria Aeroespacial (Hall 1, stand F5) have joined forces to develop and manufacture advanced defence equipment, offering important capabilities and innovative solutions to the Kingdom of Saudi Arabia (KSA) and the region.

The partners said a "notable synergy between both companies is evident through existing 'in-service' and 'combat-proven' systems" that provide battlefield support in most operational environments with high mobility, high firepower and precision strikes. A 'shoot and scoot' ethos enhances crew safety.

In terms of products on show at WDS, the flagship Milanion NTGS Alakran mobile mortar system is described as the world's lightest mortar carrier system, while Avibras boasts an array of military technology including the combat-proven Astros rocket and missile artillery system.



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Mr. Fawzi Sakr, Leasing Manager

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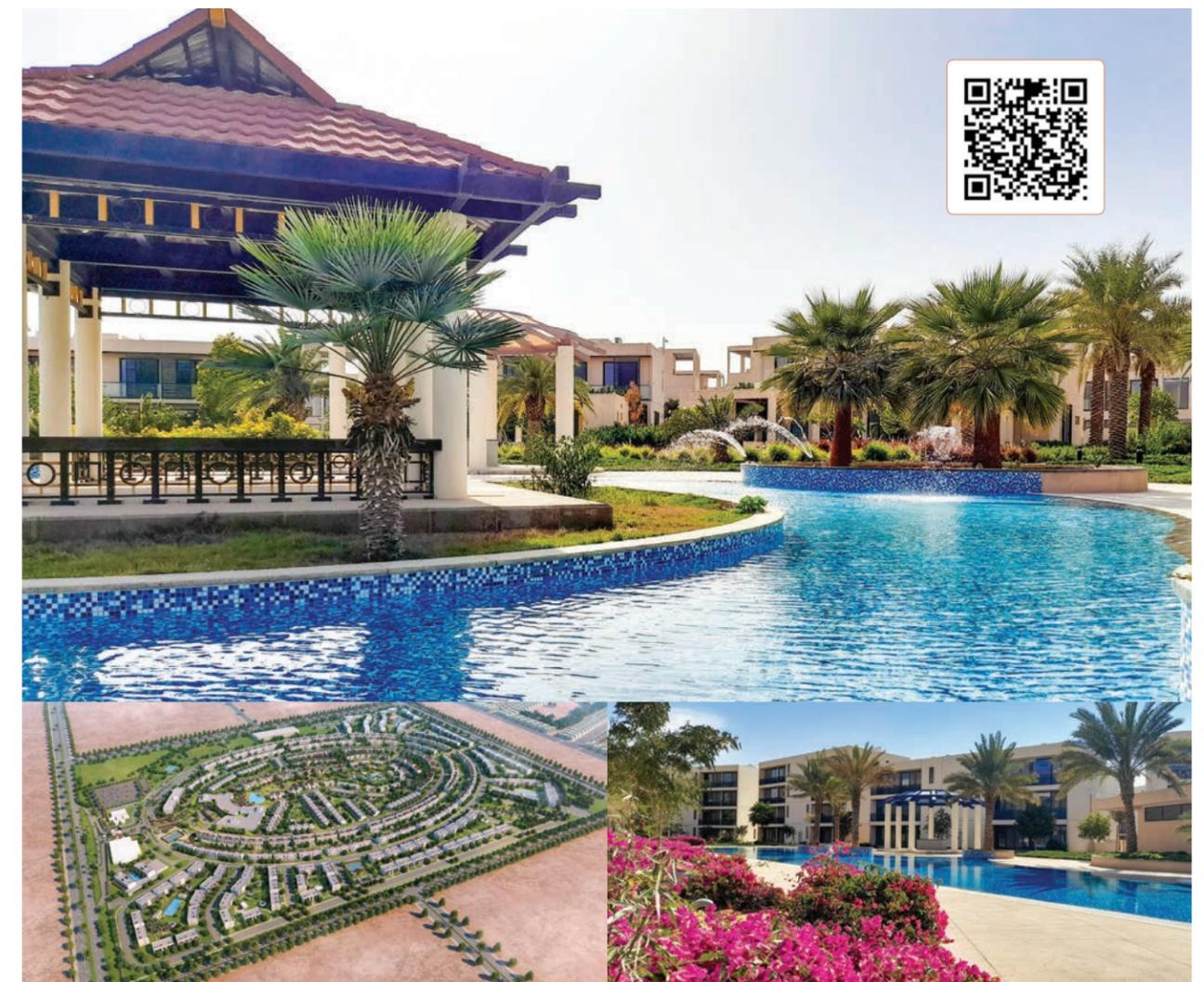
Mr. Shamsheer Ali Siyab, Head of Leasing

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Omani small arms specialist hunts new markets

Oman Munition Production Company (OMPC), the only provider of ammunition in the defence sector in Oman, is at the show displaying its product range and hoping to attract new markets.

"We provide different calibre types in small arms," said Mohammed Moosa Al Lawati, retail supervisor.

"These are three different types of the 9x19mm, four different types of the 7.62mm and three different types of the 5.56x45mm."

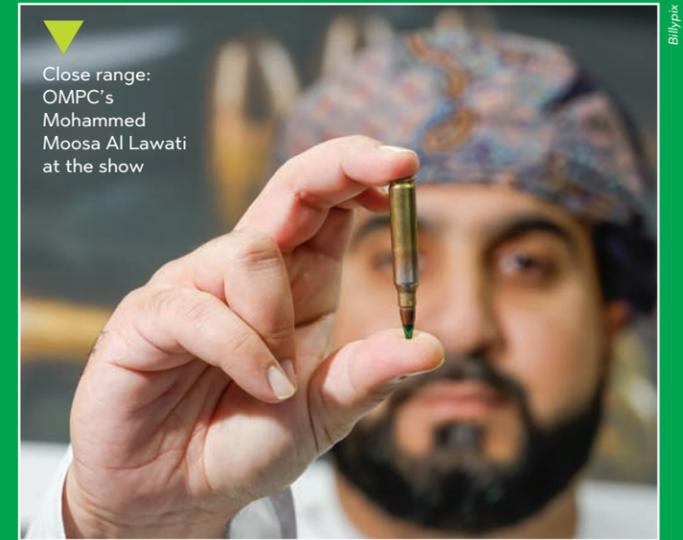
The ISO-accredited company, which is also compliant with the standards of NATO and the Sporting Arms and Ammunition

Manufacturers' Institute (SAAMI), was established eight years ago and is registered in 21 countries.

"We supply armed forces, civilian retailers and hunting clubs," said Al Lawati.

"We are proud to be a totally Omani company, working with local SMEs, research centres and downtown businesses in Oman, as well as supporting local recruitment.

"We are at WDS to show the high quality of our products, and in the future look forward to growing our business to medium calibre and large calibre."



Close range: OMPC's Mohammed Moosa Al Lawati at the show

Billypix

RSAF set to upgrade Super Mushshak trainers

New glass cockpits have given a fresh lease of life to the Super Mushshak basic trainer in recent years.

Pakistan Aeronautical Complex (PAC) builds and upgrades the aircraft at its Kamra factory, and the example in the static display has been upgraded with the Dynan system, the systems the Royal Saudi Air Force has just ordered.

Since 2016, more than 100 Super Mushshaks have either been upgraded or sold with new avionics from Dynon, GenesyS or Garmin. Going with the new avionics means

students can start training in a modern cockpit before progressing to more complex aircraft.

The RSAF originally took delivery of 20 Super Mushshaks between 2003-07 and has been looking to upgrade its basic trainer with the GenesyS IDU-680 system in recent years.

A contract was recently sealed with the RSAF for 12 aircraft, with the work to upgrade the first two or three aircraft at PAC Kamra to commence soon. Eventually the work will be split between the in-country technical support team

at Prince Sultan air base and PAC Kamra and should be completed within four years.

The RSAF aircraft will also see their four-cylinder Lycoming IO-540 engine upgraded to six cylinders to provide more power.

In addition to the RSAF order, the first eight aircraft have been delivered to the Iraqi air force, with GenesyS avionics. They are part of the air force academy that is being created at Balad air base and are set to be joined by another four to complete the 12 aircraft deal.

Negotiations are now under way for another 12 aircraft, all new aircraft being a real possibility. Nearly half of the 52 Garmin-equipped Turkish air force Super Mushshaks have also been delivered, so the production and upgrade facilities at the PAC's aircraft manufacturing factory must be in full swing.

More air forces are still believed to be looking at the veteran trainer with the new glass cockpit face-lift.



Billypix

The PAC Super Mushshak on the static display is configured with the new Dynan avionics systems recently ordered by the Royal Saudi Air Force

▲ NEWS IN BRIEF

Cutting edge R&D from Jordan

Known in the region for cutting-edge research and development, Jordan Design and Development Bureau (JODDB) is showing several of its vehicle developments at WDS (Hall 1 G9.3).

JODDB was established by royal decree in 1999 as an independent military/civilian organisation affiliated with the Jordan armed forces (JAF).

An interesting vehicle on the stand is the Al Barq, a high-mobility off-road armoured tactical vehicle designed for applications including fast response, border patrol, reconnaissance, forest rangers and special operations.

Quad Nashab is a remotely-controlled platform designed and built to carry four Nash-shab rockets with salvo firing of two rockets. The system is mounted on Al-Washaq, a small-sized lightweight 4x4 armoured vehicle designed and manufactured by JODDB.

The company's research and development activities focus on technological progress and knowledge transfer through strategic partnerships with global research institutions.



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Leonardo paints picture of future with Saudi MoU

Saudi Arabia's Ministry of Investment (MISA), the General Authority for Military Industries (GAMI) and global industrial giant Leonardo announced the signing of a memorandum of understanding (MoU) at the WDS on Sunday.

The MoU is intended to encourage the discussion, development and evaluation of a range of investment and collaboration opportunities in the defence and aerospace sector.

The sectors covered include rotorcraft, electronics and sensors, combat air and cross-domain integration, uncrewed systems, digital

technologies, MRO services and space. There was also a heavy focus on industrialisation – specifically including the localisation of electronic warfare systems and radar production, as well as helicopter final assembly.

Observers say the inclusion of combat air and cross-domain integration is interesting as it demonstrates Leonardo's willingness to collaborate on the highest-value next-generation technology initiatives and enabling demonstration projects. These could include integrated sensors, uncrewed systems and

digital technologies.

Leonardo has been supplying Saudi Arabia with platforms, systems, technologies and services for decades, and hopes to reinforce its activities in the Kingdom, starting from the set-up of an in-country regional hub, to the creation of new and multiple collaboration opportunities.

This will, Leonardo hopes, generate sustained development and production in Saudi Arabia, collaborating with local technological partners, research establishments and end-users to significantly contribute to the objectives of the Kingdom's



Leonardo

Vision 2030.

Stefano Pontecorvo, chairman of Leonardo, said: "This signing represents an important opportunity to consolidate defence co-operation and strengthen a joint vision for future combat air operations."

Solid export sales of Korean K9 artillery

Considering the number of recent live-fire evaluations of South Korea's K9 self-propelled artillery system, it is hardly surprising export sales are increasing.

Hanwha Aerospace (Hall 1 stand B2), South Korea's largest aerospace and defence company, undertakes research, development and manufacture of advanced technology systems.

The 155mm/52-calibre K9 Thunder is a popular tracked self-propelled gun with more than 1,700 units already in service. This accounts for nearly 60% of the self-propelled howitzer (SPH) market globally. Since 2001, the K9 has been ordered by eight countries including Australia, Egypt, Estonia, Finland, India, Norway, Poland and Turkey.

In 2023, the company announced shipment of a batch of K9s to Poland following the earlier arrival of 48 howitzers. It said this marked another significant step in delivering top-rated artillery systems to the Polish army, following a 2022 executive contract for a total of 212 K9 howitzers.

In late 2022, Hanwha Aerospace signed a deal to supply Norway with four more K9 SPHs and K10 ammunition resupply vehicles (ARVs) over the next two years. The contract is part of additional delivery options related to a 2017 contract for the same equipment.



Hanwha Aerospace said the howitzer can deliver consistent, accurate, rapid effects at +40km range with high rates and volumes of fire. In particular, the K9 is optimised for 'shoot-and-scoot' capability to fire multiple rounds and immediately relocate to avoid potential counter-fire.

Modifications to the K9A1 version resulted in the artillery system being upgraded to the newer K9A2

variant. It is equipped with a fully automatic ammunition handling system. The autoloading K9A2, which is being offered to the UK, mobile fires platform programme, can fire nine rounds per minute, with just three crew members.

Hanwha Defense, through its US subsidiary Hanwha Defense USA and the US Army Combat Capabilities Development Command Armaments Center (DEV-

COM AC), successfully proved the compatibility of the K9 Thunder SPH and K10 ARV with a variety of US munitions.

The live-fire demonstration took place at Yuma Proving Ground, Arizona. The K9A1 fired the XM1113 extended range rocket-assisted projectile (RAP) in excess of 50km. This was the first time the US army had tested the XM1113 with a foreign artillery solution.

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