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DAILY

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**GBP** AEROSPACE  
DEFENCE

# Daily News

## D&S 2019 AMID MODERNISATION

The DEFENCE & SECURITY 2019 opens with a focus on regional cooperation and business partnerships for a more united and effective response regarding disaster management, cyber security, anti-terrorism and defence production.

Thailand is in the midst of a defence modernisation programme. The country is expected to spend the armed forces' budget, amounting to 233.35 billion baht (about US\$7.69 billion), on the repair and maintenance of weapon systems deployed over the last four decades.

Thailand also plans to buy newly-built weapon systems to replace those which can no longer be repaired. Security spending in the ASEAN region alone is projected to soon reach US\$9.23 billion.

The total defence spending of ASEAN States has doubled over the last 15 years with countries like Thailand witnessing military expenditure at high rates.

The nature of security threats in Thailand includes potential political unrest, occasional border disputes, domestic terrorist and separatist group activities in the troubled southern provinces, natural disasters, human smuggling and illicit drug trafficking. All these will result in the increasing demand for modern internal security equipment.

The upgrading of border security and demand for effective immigration control at all airports, bus such as biometrics, fixed surveillance devices, terminals and sea ports has also fuelled the need for equipment and unmanned aerial vehicles. ■



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MANAGER Robert Bjoerklund**  
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# The Next Revolution in Flight

## AW609 TiltRotor

AW609 IS EQUIPPED TO FLY IN KNOWN ICING CONDITIONS. TITANIUM/COMPOSITE CROSS SHAFTS COUPLE THE TWIN PRATT & WHITNEY PT6C-67A ENGINES WITH OEI CAPABILITY.

ALL COMPOSITE WING WITH DEICE BOOTS. TRIPLEX FLY-BY-WIRE FLIGHT CONTROLS. TRIPLE REDUNDANT HYDRAULIC AND ELECTRICAL SYSTEMS.

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Visit us at Defence & Security, Hall 1-2, Stand M09





## RTAF INDUCTS UPGRADED F-5 TH AND U1 UAV

The Royal Thai Air Force (RTAF) has inducted upgraded F-5 TH and the RTAF U1 Unmanned Aerial Vehicles (UAVs) in a ceremony, marking a major upgrade to the capability of the small but potent air arm. A total of 14 F-5 fighter aircraft have

been modified to the F-5 TH standard and will remain operational for another 15 years till 2035.

Thailand's domestic defence industry in close partnership with the RTAF have produced 17 RTAF U1 UAVs. The RTAF's new

unmanned platform has an endurance of eight hours and an operating radius of 100 km. The U1 meets international airworthiness requirements and also features an automatic landing system. RTAF U1 Airworthiness UAS certification effort was jointly handled by the RTAF, Thai industry and certification authorities.

### More Firepower

The upgraded F-5 THs receive structural upgrades and modern avionics, in addition to a new radar, self defence systems and Data Link. The ability to fire Beyond Visual Range Air-to-Air Missiles (BVRAAM), acquire targets at longer distances and an upgraded cockpit with better situational awareness coupled with a datalink, have dramatically upgraded the combat effectiveness of the ageing fighters. The RTAF's upgraded F-5 TH aircraft feature an Elbit radar which can detect targets at a distance of not less than 40 nautical miles. It also offers Synthetic Aperture Radar (SAR) capability. Elbit was awarded a contract worth approximately US\$93 million in August 2017 for a three year programme to upgrade RTAF F-5s.

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## UPGRADED T-50 FOR RTAF BY 2021



Royal Thai Air Force (RTAF) T-50 Golden Eagle Lead-In Fighter Trainers are currently in the midst of an upgrade by Korea Aerospace Industries (KAI). The Korean airframer is upgrading the RTAF T-50s with a Radar, Radar Warning Receiver (RWR) and Counter Measures Dispenser System (CMDS). The RTAF is slated to take delivery of the final upgraded T-50 by October 2021. A KAI official says the US\$52 million deal could raise the performance of the T-50TH and further, will keep a high operation rate via the smooth operation of the aircraft.

Thailand has purchased 12 T-50s in two batches in 2015 (four aircraft) and 2017 (eight aircraft) respectively. Four aircraft under the first order have been inducted for training since March 2018, while the eight additional units will be delivered by 2020, starting later this year. The T-50 family is equipped with the Elta EL/M-2032 pulse Doppler radar. The aircraft variants are currently under operation in Thailand, the Philippines, and Indonesia. KAI is eyeing to export the aircraft to Malaysia and Argentina. ■



## LEONARDO PITCHES M-345 FOR THAI TRAINING

In the context of the Thai Air Force requirement to introduce a modern basic training system within its inventory, Leonardo is promoting the M-345 latest-generation training platform. The M-345 can be rightfully considered as the latest, natural outcome of Leonardo's longstanding experience in designing and producing integrated training systems capable of meeting the widest range of Air Forces' requirements in the safest and most cost-effective ways. A highly performing basic trainer aircraft designed

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**Robert Bjoerklund**  
Country Manager  
Thailand, Saab Asia Pacific

Robert Bjoerklund, Country Manager Thailand, Saab Asia Pacific, spoke with Daily News to provide an update on the company's participation at Defence & Security 2019. Bjoerklund says that are many opportunities for Saab in Thailand and discussions are already underway for several procurement proposals.

**Saab at Defence & Security 2019**

Saab has a pretty good installed base, here in Thailand, with the Gripen and Saab 340 AEW&C aircraft, which are operational with the Royal Thai Air Force (RTAF). We are displaying the new generation Saab RBS 70NG along with the Carl Gustaf family along with our training and simulation systems with our local partners. We will be displaying Giraffe 1X air defence radar and a number of other solutions that are relevant to the region.

**Emerging Opportunities**

We have many opportunities when it comes to Thailand, both from our aeronautics and surveillance business, which are Govt-to-Govt agreements. The new

MS20 software standard should it be selected by Thailand, will also confer new and superior capabilities on the RTAF Gripen fleet. The Gripen fleet in Thailand continues to demonstrate high availability and the aircraft have performed well in international exercises. We understand that the aircraft often exceed the requirements and Gripens in Thailand also have a unique Network Centric Warfare (NCW) capability.

We see some potential for the Carl Gustaf, we know there is a need for these systems and are in discussions. We have sold a training and simulation system for this earlier and there is a need for upgrades and new ammunition as well. We will also market the Carl Gustaf M4 here. The RBS70 is already in use here. Thailand also requires new missiles to replace those that are used during annual live firings. We also have an installed base here of ground-based surveillance systems and these are in need of being upgraded and replaced and this is an area where we see possibilities for the future.

**Future Requirements**

We understand that there will be a greater requirement from Thailand for Transfer of Technology (ToT), when military equipment is procured with increase in the level of local sourcing. Saab is able to offer high-end military equipment and technologies at a competitive price with a long-term commitment for maintenance and support. We are able to meet the requirements from nations that desire a greater sovereign capability due to Sweden's non-aligned status. ■

**READY FOR STRATEGIC PARTNERSHIP**

Saab of Sweden has a strong presence in Thailand and is confident of emerging prospects in a number of market areas.



**GRIPEN & SAAB 340 AEW&C: A UNIQUE PAIRING FOR THAILAND**

Royal Thai Air Force has been the sole Asian customer for the Gripen since 2008. To meet the specific and demanding requirements of the Thai armed forces, Saab developed a complete system for national defence built around the Gripen fighter and Erieye AEW&C. The uniquely Thai system has been operational for some time now and features a tightly integrated and secure national command and control network that links air, land and naval assets in a net-centric capability. Indeed, the Thai armed forces can lay claim to be one of very few SE Asian nations that has operationally deployed such a Network Centric Warfare system.

**NETLINE ADDS TO DRONENET SOLUTION**

Netline Communications has upgraded its DroneNet solution with a new, MIL STD-compliant DF component. The upgraded DroneNet solution is on display at the ongoing show. The addition of the new sensor allows the drone location system to point to the direction and elevation of a detected drone, when fitted with a single DF sensor. For the determination of a precise 3D location multiple DF sensors need to be employed. "As future threats in this field evolve, Netline continues to invest in developing additional capabilities in several domains," says Yallon Bahat, CEO of Netline. "We are proud to reveal two of these capabilities, providing enhanced

actionable information, such as precise 3D location, and surgical mitigation. Netline's solution is one of the first of its kind currently available in the C-Drone market. This latest development aligns with our vision to become one of the leading players in the C-Drone solutions arena, and our aim to overcome our customers' operational gaps." Netline is also displaying a miniature jamming payload, carried on a racer drone, capable of reaching speeds of up to 300 mph. It allows for pinpoint jamming of suspicious drones intruding on secured airspace, giving customers the ability to deal with threats surgically, without having to use the entire DroneNet jamming segment. ■



# BRAHMOS

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## RTAF INDUCTS UPGRADED F-5 TH AND UT UAV



F-5 TH aircraft currently make use of Rafael's Derby BVRAAM and Close Combat Missiles (CCM) that are in the air force inventory such as the Diehl IRIS-T, Raytheon AIM-9M and Rafael Python 4. RTAF Gripens and F-16s carry the InfraRed Imaging System – Tail/Thrust Vector Controlled (IRIS-T) CCM and additional missiles were ordered in June 2018 for the F-5 fleet. Also supported are Navigation / Targeting Pods such as the Rafael Litening 3 and Rafael Sky Shield jamming pod which are currently in use with the air force. A substantial upgrade to the F-5 is related to the installation



of a modern EW system comprised of a Radar Warning Receiver (RWR) and Countermeasure Dispenser System (CMDS).

### Upgraded Cockpit

The F-5 TH cockpit now features two Multi-Function Displays (MFDs), Color Moving Map display, updated Head Up Display (HUD) and Up Front Control Panel (UFCP) and new radios. The pilots wear Elbit DASH IV Head Mounted Systems (HMS). A new Mission Computer (MC) has been installed. A Digital Video and Data Recorder (DVDR) system, able to record video and audio has also been fitted and it includes a post-flight briefing system (Debriefing System). The Environment Control System (ECS) has been upgraded and the electricals have been beefed up to cater for future growth needs as well.

### Flying into the Future

Prior to the F-5 Super Tigris modernisation and upgrade effort, RTAF F-5Es had a lifespan of 7,200 flying hrs. This has now been increased to up to 9,600 flying hours as a result of structural improvements and obsolescence management. The F-5 TH modernisation was performed in two phases; Phase 1 saw 10 aircraft being upgraded, while Phase 2 saw the remaining four aircraft upgraded. The RTAF has operated the F-5 since 1978. ■

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## LEONARDO PITCHES M-345 FOR THAI TRAINING



to be simple, effective and reliable, the M-345 provides student pilots with a training environment that simulates the flight behavior, maneuver capability, and physical experience of jet aircraft.

The M-345 is the ideal aircraft to replace the current line of basic trainers around the world offering higher performance

compared to heavy turboprop trainers and, at the same granting, a safe and smooth transition from the lower end primary trainers. In particular, within the Italian Air Force (IAF) syllabus, the M-345 will be utilized to bring the student pilots from the SF-260 directly up to the very sophisticated M-346 advanced/lead-in fighter trainers. So far the Italian Air

Force has placed orders for 18 M-345 basic trainers up front. There is a much larger requirement for the replacement of the MB-339 trainers. The quantity of the Italian Air Force's M-345 trainers will be increased in the next few years concurrently with the phasing out of the overall MB-339 fleet. Thanks to its excellent flying qualities and maneuverability the M-345 is also due to replace the MB-339 in the world renowned Italian aerobatic team, the "Frecce Tricolori".

The first production aircraft successfully performed its maiden flight on December 21, 2018 delivering excellent performance. During 2019, the M-345 undertook over 40 test flights ahead of planned certification by the end of the year.

Leonardo has over 60 years of experience in the design and production of aircraft and integrated training system that include flight simulators and other ground-based teaching aids, in addition to an integrated simulation system on board the aircraft, all of which are seamlessly integrated into a single LVC (Live, Virtual, Constructive) training environment. ■





# BRAHMOS EVOKES PHILIPPINE INTEREST

The BrahMos supersonic cruise missile is attracting interest from the Philippines. Senior officials from the Philippine Army expressed keen interest in the BrahMos missile system during a visit of the Indian warship INS Sahyadri (F-49), a guided missile stealth corvette, which made a port call at Manila, Philippines in October.

“The Philippine Army is interested in acquiring this type of missile as it will strengthen our coastal defence operations,” said Lieutenant Colonel Ramon P. Zagala, Philippine Army Spokesperson. Philippine Army Vice Commander Major General Reynaldo M. Aquino and other Army officers were briefed on the BrahMos missile system by the Commanding Officer of INS Sahyadri Captain Ashwin Arvind.

The Philippines is looking at an Integrated Missile Defence System programme, that will feature close coordination with the Philippine Navy and Air Force. The Philippine Army activated its first 1st Land-Based Missile System Battery (1LBMS Btry) in October and is currently working on its training programs before acquiring its future equipment. 1LBMS Btry will operate under the Army Artillery Regiment (AAR) will help augment the army’s firepower in any future large-scale armed confrontation.

A majority of the frontline ships of Indian Navy, such as INS Kolkata, INS Ranvir and Teg Class warships are capable of firing BrahMos. Land attack variants of BrahMos provide Indian warships with the ability to precisely neutralize selected targets deep inland, far



away from coast, from stand-off ranges at sea. India’s Ministry of Defence (MoD) has also given its approval for the procurement of Next Generation Maritime Mobile Coastal Batteries (NGMMCB, Long Range) which would be fitted with BrahMos surface-to-surface cruise missiles. The NGMMCB will be deployed along the Indian coastline. The latest variant delivered to the army is the BrahMos Block III, which has been tested in full operational land-to-land configurations from Mobile Autonomous Launchers (MAL) at its full-range.

An air launched version of the BrahMos will soon be operational with the Indian Air Force (IAF), following the completion of operational testing. The 2.8 Mach BrahMos missile is ideally suited for launch from large stand-off ranges to engage fortified targets deep inside the enemy territory with precision. The BrahMos air launched cruise will also be available in an anti-shipping missile version. A new variant is the BrahMos NG which is confirmed for fitment on both Tejas Mk1A and Tejas Mk2 variants, BrahMos NG will be a lighter weight missile and incorporate numerous advances in its stealth and seeker technology. Two BrahMos-NG supersonic cruise missiles can be carried on the Tejas on its outboard wing pylons. The high speed of BrahMos-NG coupled with its advanced seekers, which provide multi-target capability, will make it a lethal stand-off weapon.

Efforts are underway for greater indigenization of the cruise missile with an Indian propulsion system, indigenous seeker, airframe, power supply and other major indigenous components. Critical indigenous components including fuel management system and other non-metallic airframe components have already been qualified to form part of the missile.

The Indian Navy inducted BrahMos in 2006, followed by the Indian Army, which inducted the supersonic cruise missile weapon system in 2007. The air force has already operationalized the mobile, land based BrahMos since 2014. BrahMos Aerospace Private Limited, is a JV between India’s Defence Research & Development Organisation (DRDO) and NPO Mashinostroyeniya (NPOM) of Russia. ■

# KAREL DEFENCE SOLUTIONS สนใจตลาดเอเชียตะวันออกเฉียงใต้

บริษัทการสื่อสารทางทหารของตุรกี Karel Defense Solutions กำลังขยายตัวอย่างแข็งแกร่งในตลาดเอเชียตะวันออกเฉียงใต้และกำลังจัดแสดงผลิตภัณฑ์ที่หลากหลายในงาน Defence & Security 2019 การเน้นที่การเติบโตของธุรกิจการสื่อสารทางทหารของบริษัท นั้นได้ขยายไปสู่ตะวันออกกลางและกำลังมองหาโอกาสที่จะทำโครงการสื่อสารทางทหารระยะยาวในตลาดส่งออก

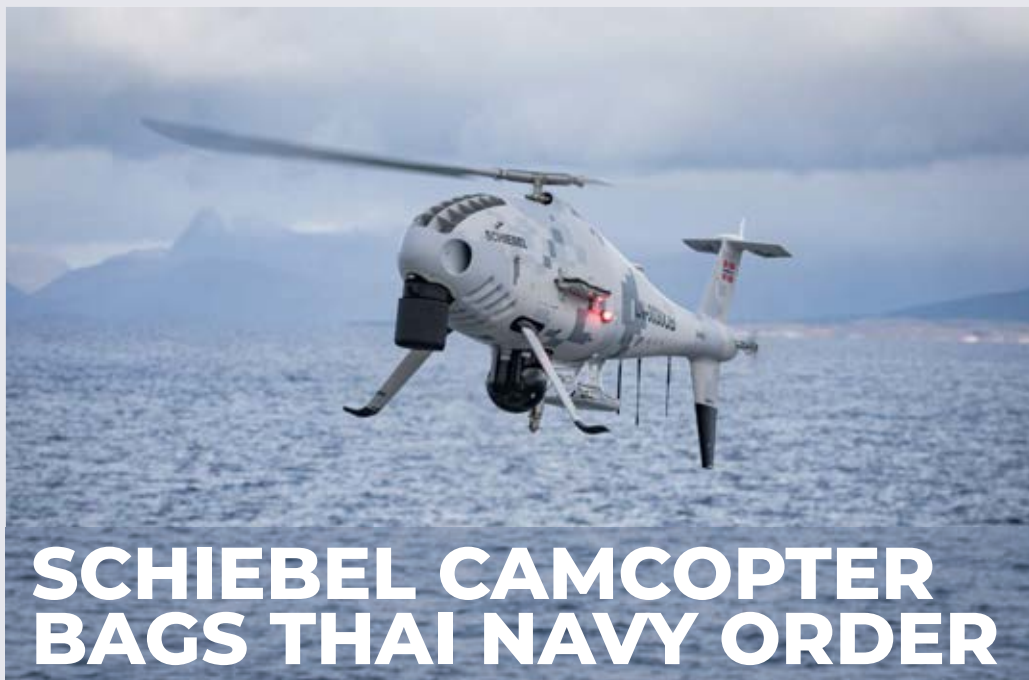
Karel Defense Solutions ให้บริการด้านอุปกรณ์เครื่องมือการสื่อสาร เช่นโทรศัพท์สแกน RoIP, IP เกตเวย์และอินเทอร์เน็ตคอมพิวเตอร์สำหรับยานพาหนะติดอาวุธทางยุทธวิธี บริษัทมีประสบการณ์กว่า 15 ปีในด้านการสื่อสารทางทหาร ผลิตภัณฑ์ที่สำคัญได้แก่ ระบบสื่อสารโทรศัพท์สแกน แบบ DS200T ซึ่งใช้กันอย่างแพร่หลายสำหรับการสื่อสารของกองทัพผ่านการเชื่อมโยงวิทยุกับ



พอร์ต IP ระบบการสื่อสารทางยุทธวิธี IP ให้บริการ IP / SIP สำหรับการปฏิบัติการด้วยความสามารถในการเชื่อมต่อเครือข่ายทางวิทยุในการระบบ DS200A เป็นแพลตฟอร์ม PBX สำหรับกองทัพเรือในการกำหนดค่าซ้ำซ้อนอย่างสมบูรณ์และสามารถรองรับสมาชิกกว่า 100 ราย มันยังมี

ที่มีขนาดกะทัดรัดและทนทานซึ่งเรียกว่า DS200D ขณะที่จุดสนใจหลักของ บริษัท คือระบบการสื่อสาร Karel Defense Solutions ยังมีศักยภาพที่ได้รับการพิสูจน์แล้วในการพัฒนาและจัดหาแผงควบคุมอิเล็กทรอนิกส์ SSD คอมพิวเตอร์ทางทหารชนิดมือถือที่ทนทาน, ระบบ IMU เป็นต้น บริษัท ยังคงลงทุนในกิจกรรมการวิจัยและพัฒนา การพัฒนาการผลิตและสิ่งอำนวยความสะดวกสำหรับการทดสอบซึ่งช่วยในการแข่งขันระดับโลกและนำเสนอแนวทางการสื่อสารทางทหารที่ทันสมัย

Karel Defense Solutions เป็น บริษัท ในเครือของ Karel ผู้ให้บริการเทคโนโลยีและระบบการสื่อสารชั้นนำในประเทศตุรกี Karel มีพนักงานมากกว่า 2,050 คนและนอกจากจะเป็นผู้นำตลาดในตุรกีแล้วยังส่งออกผลิตภัณฑ์และเทคโนโลยีไปยังกว่า 30 ประเทศ ■



## TERMA SHOWCASES CRITICAL SOLUTIONS

Terma is promoting a range of mission critical solutions at the ongoing show and is showcasing the ability of these products, which have been chosen by many armed forces around the world to effectively protect their assets on sea, land and in the air. “We look forward to meeting customers, industry partners, officers and maritime & security experts at our stand during Defence and Security 2019. This event in Bangkok enables us to showcase our key airborne, maritime, and security technologies and products to a prestigious and recognized audience,” says Anupam Narain Mathur, Vice President & General Manager Terma Asia Pacific.

Terma is presenting its Scanter radars, C-Flex Combat Management System (CMS), C-Guard Naval Decoy Launching System and aircraft survivability equipment including 3D-Audio. The Scanter radar is the only radar sensor providing simultaneous small target detection and helicopter guidance and is ideal for detecting and tracking non-cooperative small targets in extreme environments and adverse weather conditions. Terma’s flexible, scalable and modular command and control system, C-Flex CMS enhances the operational capabilities of maritime forces by increasing the situational awareness and interoperability for combat and non-combat vessels. ■

## SCHIEBEL CAMCOPTER BAGS THAI NAVY ORDER

Vienna-based Schiebel Group has bagged its first contract from the Royal Thai Navy (RTN) for the supply of the Camcopter S-100 Vertical Takeoff and Landing (VTOL) Unmanned Air System (UAS). Schiebel was awarded the contract following the completion of an extensive competitive tender process. The RTN will deploy the Camcopter S-100 UAS in 2020 to the Pakphanang District, in the province of Nakhon Si Thammarat in Thailand. The RTN will also deploy the VTOL UAS on its frigate fleet to undertake land and sea based Intelligence, Surveillance and Reconnaissance (ISR) operations. The RTN will acquire two Camcopter S-100 systems at a cost of 600 million Baht.

The introduction of the VTOL UAS, marks its first such deployment by the

RTN for maritime operations. “With the Royal Thai Navy, we have another major maritime contract to add to our growing list of customers. Our Camcopter S-100 is recognised for being a reliable and proven UAS, especially at sea, which is why we outpaced all other UAS suppliers in the competitive tender process,” said Hans Georg Schiebel, Chairman of the Schiebel Group. Schiebel has partnered with MoraThai Defence Company Limited of Bangkok to deliver the commercial offset aspects of the contract in Thailand. The Camcopter S-100 VTOL UAS has a beyond line-of-sight capability out to 200 km / 108 nm, over land and sea. Typical operational configuration for the unmanned type involves 34-kg / 75-lbs payload, with which the Camcopter S-100 can stay aloft for up to 10 hours. ■



# Leonardo เสนอเครื่องบินฝึก M-345 ต่อกองทัพอากาศไทย



Leonardo เสนอเครื่องบินฝึกรุ่นใหม่ล่าสุด M-345 ต่อกองทัพอากาศไทยในงาน Defense & Security 2019 ที่กำลังดำเนินอยู่ในกรุงเทพฯ ตามความต้องการของกองทัพอากาศไทย สำหรับระบบการฝึกบินขั้นพื้นฐานที่ทันสมัยกับเครื่องบินรบที่มีอยู่ M-345 เป็นเครื่องบินฝึกขั้นต้นที่มีสมรรถนะสูงและได้รับการออกแบบมาให้ใช้งานง่ายมีประสิทธิภาพและเชื่อถือได้ เครื่องบินฝึกไอพ่น M-345 จะให้สภาพแวดล้อมการฝึกนักบินที่จำลองพฤติกรรมการบินความสามารถทางการบิน และประสบการณ์ทางกายภาพของเครื่องบินรบไอพ่นนี้ ทำให้เป็นการทดแทนที่ดีสำหรับเครื่องบินฝึกขั้นต้นที่มีอยู่ในปัจจุบัน M-345 ให้สมรรถนะทางการบินที่สูงกว่าเมื่อเทียบกับเครื่องบินฝึกใบพัดติดเครื่องยนต์เทอร์โบพร็อพ ที่มีน้ำหนักมาก ในขณะเดียวกันก็ให้การเปลี่ยนผ่านที่ราบรื่นและปลอดภัยจากเครื่องบินฝึกระดับล่างสุด ภายในหลักสูตรของกองทัพอากาศอิตาลี (IAF) M-345 จะถูกนำไปใช้เพื่อเปลี่ยนศิษย์การบินจากเครื่องบินฝึกขั้นต้น SF-260 ไปยังเครื่องบินฝึกขั้นสูงแบบ M-346 ที่ทันสมัยและเป็นเครื่องบินฝึกนักบินขับไล่

จนถึงขณะนี้ กองทัพอากาศอิตาลีได้สั่งซื้อ เครื่องบินฝึกขั้นต้นจำนวน 18 เครื่อง แต่ก็ยังมีความต้องการอีกมากสำหรับการทดแทนเครื่องบินฝึกแบบ MB-339 จำนวนของเครื่องบินฝึก M-345 ของกองทัพอากาศอิตาลีจะเพิ่มขึ้นในอีกไม่กี่ปีข้างหน้า พร้อมๆกับการยุติการใช้งานฝูงบินแบบ MB-339 ทั้งหมด การสั่งซื้อเครื่องบินฝึก

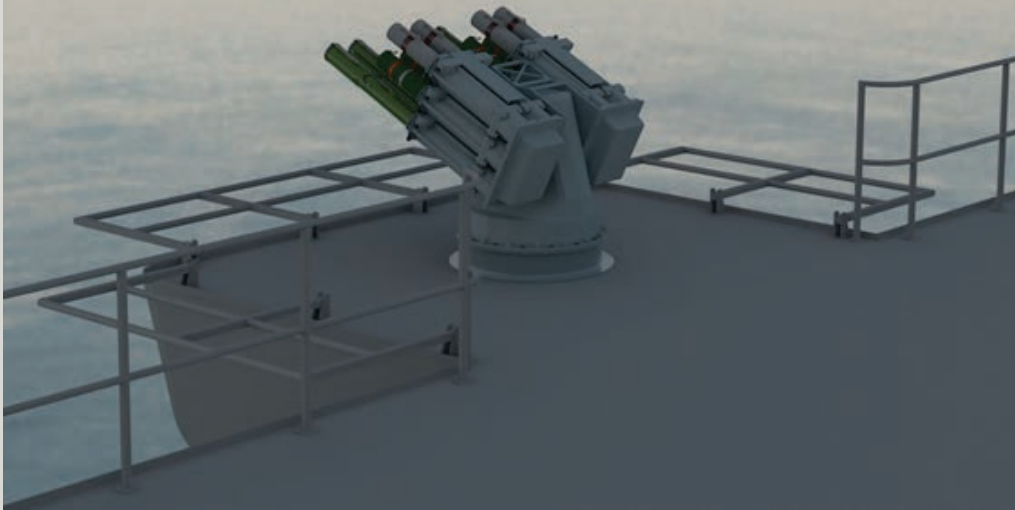
แบบ M-345 นั้นยังมีสาเหตุมาจากความต้องการที่จะทดแทนเครื่องบินแบบ MB-339 ที่ยังคงบินกับทีมบินผาดแผลงของอิตาลีคือ "FrecceTricolori" การตัดสินใจครั้งนี้ได้รับการพิจารณาโดยคำนึงถึงสมรรถนะทางการบินอันยอดเยี่ยมและความคล่องตัวของเครื่องบินใหม่นี้ M-345 เครื่องแรกประสบความสำเร็จในการบินครั้งแรกเมื่อวันที่ 21 ธันวาคม 2561 ให้สมรรถนะทางการบินอันยอดเยี่ยม M-345 ทำการบินทดสอบมากกว่า 40 เที่ยวบินในช่วงปี 2562 และมีแผนที่จะได้รับการรับรองภายในสิ้นปีนี้

M-345 ถือได้ว่าเป็นผลงานล่าสุดที่เป็น

ธรรมชาติของ Leonardo ซึ่งมีประสบการณ์ยาวนานในการออกแบบและผลิตระบบการฝึกแบบบูรณาการที่สามารถตอบสนองความต้องการอันหลากหลายในวิธีที่ปลอดภัยและคุ้มค่าที่สุดของกองทัพอากาศ Leonardo มีประสบการณ์ยาวนานกว่า 60 ปีในการออกแบบและผลิตเครื่องบินและระบบการฝึกแบบบูรณาการซึ่งรวมถึงเครื่องฝึกจำลองการบินและเครื่องช่วยฝึกภาคพื้นอื่นๆ นอกจากนี้ ยังมีระบบจำลองสถานการณ์แบบบูรณาการบนเครื่องบิน ที่บูรณาการเข้ากับสภาพแวดล้อมของการฝึก LVC (Live, Virtual, Constructive) ได้อย่างไรก็ตาม



# SEA SHOWCASES MARITIME SOLUTIONS

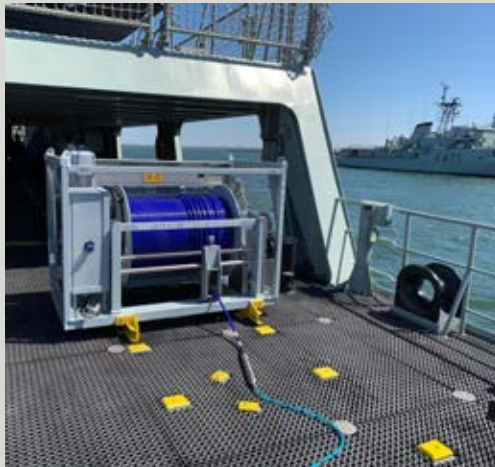


UK based SEA is participating at the ongoing show with a range of maritime mission system capabilities on display, including the firm's new Trainable Decoy Launcher, miniaturised towed array and KraitArray Family of low profile miniaturised acoustic arrays. The Trainable Decoy Launcher System will be available in 2020 and was launched at DSEI London in September.

The new decoy system can protect surface platforms from missile and torpedo threats and is capable of a wide range of movement, rapidly delivering complex patterns of mixed decoys around platforms. It offers a sophisticated threat processing engine, which can recommend and enact responses to a wide range of threats much more quickly than traditional systems, minimising the need to manoeuvre the ship, improving its effectiveness.

The gyro stabilised launcher has a wide range of movement, so that the system can offer countermeasure coverage to both sea skimming and ballistic trajectory threats. The Trainable Decoy Launcher System supports 130mm and other decoy types, including: Chaff; Flares; Active rounds; Expendable torpedo countermeasures; Rocket/mortar, and mortar launched sub munitions and Programmable rounds

SEA announced recently that its innovative Anti-Submarine Warfare (ASW) system had successfully completed sea trials with the Portuguese Navy. The KraitSense low-profile passive sonar



system detected, tracked and classified a submarine whilst deployed from a Portuguese Navy offshore patrol vessel (OPV). When compared to traditional line and towed arrays, KraitSense offers low power consumption, drag and weight, in addition to significant cost efficiencies. KraitSense provides a cost-effective ASW solution for navies of all sizes and features an innovative low profile miniaturised acoustic array suitable for towed and static applications on both manned and unmanned vessels. ■



## TURKEY EYES ASIAN MARKET

There is a strong participation from the Turkish defence industry at the ongoing Defence and Security exhibition by 32 companies under the leadership of Presidency of Defense Industry (SSB) and the Defense and Aviation Industry Exporters Union (SSI). An official Turkish delegation is also at the show to promote the partnerships with Asian countries. Turkish Aerospace is one of the giants in the Turkish defence industry and is looking to further improve on its successes in the region with its participation at the ongoing Defence and Security exhibition. The Turkish airframer will look to strengthen recent business partnerships and is also seeking to further business opportunities with potential Asian customers not only in Thailand but also in Pakistan, Singapore, Philippines, Malaysia as well.

The T129 ATAK Multirole Combat Helicopter and ANKA Unmanned Aerial Vehicle (UAV) are expected to attract strong interest at the show. Deliveries of the T129 ATAK continue and the 53rd helicopter was handed to the Turkish land forces in November. The maiden flight of a new T129 FAZ-2 helicopter, which is an upgraded version of the ATAK took place in November. The upgraded attack helicopter is fitted with a Laser Warning Receiver and Electronic Warfare (EW) systems. The first T129 FAZ-2 ATAK helicopters will be delivered in mid-2020, following the completion of developmental activities. The airframer also announced in November, that ANKA had successfully flown for 26 hours and 30 minutes, marking a major milestone for the unmanned type. In addition to T129 ATAK and ANKA, Turkish Aerospace is showcasing its entire portfolio ranging from fixed and rotarywing platforms to UAV systems and space systems. ■



# KAREL DEFENCE SOLUTIONS OPTIMISTIC ABOUT SE ASIA MARKET

Turkish military communications firm Karel Defence Solutions is making a strong push to grow its presence in the SE Asian market and is showcasing a wide range of products at the ongoing Defence & Security (D&S) show. The emphasis to grow the firm's military communications business, has also seen it expand into the Middle East and it is looking to undertake long-term military communications projects in export markets.

Karel Defence Solutions provides a variety of field telephone exchanges, Radio over IP (RoIP), Internet Protocol (IP) Gateways and also intercom solutions for tactical armed vehicles. The firm has more than 15 years of experience in the field of military communications. Key products include the DS200T series military field telephone exchange system, which is widely used for army communications via connecting radio links with IP ports. The tactical

IP communication system provides IP/Session Initiation Protocol (SIP) facilities for operations with its combat net radio connection capability. The DS200A is a Private Branch Exchange (PBX) for naval platforms in fully redundant configuration and can cater for 100+ subscribers. It is also available as a compact, ruggedized version called the DS200D.

While the main focus of the firm is communications systems, Karel Defence Solutions also has a proven capability in developing and providing electronic control boards, Solid State Disks (SSDs), ruggedized/military hand held computers, Inertial Measurement Unit (IMU) systems etc. The firm continues to invest in Research & Development (R&D) activities and creation of developmental, manufacturing and test facilities, which have allowed it to stay abreast of global competition and offer state-of-the-art military



communications solutions.

Karel Defence Solutions is a subsidiary of Karel, a leading provider of communications technologies and solutions in Turkey. Karel has over 2,050 employees and in addition to being a market leader in Turkey, exports products and technologies to more than 30 countries. ■

## FN HERSTAL PUTS FIREPOWER ON DISPLAY



Belgium-based FN Herstal is showcasing its range of small caliber weapon and weapon systems at the ongoing show. The newest addition to the FN SCAR family is the subcompact FN SCAR-SC subcompact carbine, which is available in 5.56x45mm (.223 Rem cal.) or 7.62x31mm (.300 BLK). FN SCAR assault rifles can also be fitted with the 40mm FN40GL Mk2 grenade launcher (mounted under or used as a stand-alone launcher). To achieve full

potential on the battlefield, the FN FCU Mk3 Fire Control Unit can be fitted on the FN40GL grenade launcher (or any multi-shot grenade launcher). The addition of the FCU Mk3 Fire Control Unit provides a complete sighting and aiming solution. FN's SCAR-L (5.56x45mm/.223 Rem) and SCAR-H rifles (7.62x51mm/.308 cal.) are also on display. FN Herstal's SCAR series of rifles already equip numerous Special Forces (SF) units worldwide.

The Belgian arms manufacturer is also displaying its MINIMI Mk3 Light Machine Guns (LMG), which are available in 5.56x45mm and 7.62x51mm NATO calibers. The new deFNder Medium Remote Weapon Station (MRWS) being showcased is a highly flexible weapon system and the RWS can accept the FN MINIMI 5.56 (FN M249), MINIMI 7.62 (FN Mk48),



MAG (FN M240) and .50 cal weapons such as FN's M2HB-QCB and exclusive FN M3R machine guns. Another new product is FN's D-RMP Digital Rocket Machine Gun Pod, which features three 70mm rocket launcher tubes and a 250-round .50 cal ammunition box. FN Herstal's FN Light Pintle System (LPS) can be mounted on new or in-service platforms and used for suppressive fire in an anti-personnel role up to 1,000m when fitted with the FN MAG 58M. ■

# AERONAUTICS PUTS ORBITER 4 UAV ON SHOW



Israel-based Unmanned Aerial Systems (UAS) manufacturer Aeronautics Group is highlighting its Orbiter 4 advanced unmanned multi-mission platform at the ongoing Defence & Security exhibition. Also being showcased are the company's Dominator XP MALE UAS, Orbiter 3 and the Pegasus 120 UAV. The Orbiter 4 Small

Tactical UAS is an evolution of the company's Orbiter line and is ideal for both land and maritime operations.

The Orbiter 4 has a Maximum Take-Off Weight (MTOW) of 110 pounds and can carry payloads with a maximum weight of 26 pounds. It has a wing span of 18 feet and Line of Sight (LOS) communication range is 93 miles. The Orbiter 4 can attain a max speed of 70 kts and can fly up to an altitude of 18,000 feet. It can stay in the air for up to 24 hours. The new UAS can simultaneously carry multiple payloads, extending its ISTAR capabilities and needs only a small crew of 3 personnel.

Aeronautics Group is also promoting its Dominator XP Medium Altitude Long Endurance UAS (MALE UAS), which is based on a DA-42 twin star commercial aircraft. The Dominator XP can perform comprehensive ISR missions at long ranges beyond line-of-sight and is ideal for military as well as homeland security missions, over land and sea, and is capable of all weather and denied-GPS operation.

A maritime variant offers the ability to perform under-water detection combined with traditional sea surveillance. With a payload capability of up to 373 kg; the Dominator XP can carry EO/IR and hyper-spectral sensors with laser pointer and designator, maritime radar, SAR\GMTI radars, communications relays, COMINT, ELINT, MAD and additional sensors. ■

The Orbiter 4 features an open architecture that allows it to carry and operate two different payloads simultaneously.

## THE ORBITER 4 CAN CARRY DIFFERENT PAYLOADS SUCH AS:

- Maritime patrol radar (MPR)
- Cellular interception sensor – which allows Orbiter 4 to conduct ISR missions over different theaters exploiting various communication technologies in-use by targets. The sensor overcomes ground intelligence collection constraints of inaccessible areas and LOS limitations, while expanding coverage and ensuring covert operation.
- Satellite communication
- Controp's advanced XR electro-optic payload
- Synthetic Aperture Radar (SAR)

# ROYAL THAI POLICE ADDS TO H175 OPERATOR LIST

The Royal Thai Police is one of the newest operators of the Airbus Helicopters H175 and the first Asia Pacific operator of the type, following the recent delivery of two helicopters. The new super medium helicopters will be used for VVIP transportation and various police missions and are equipped with the latest aircraft technology and capabilities.

The H175 can seat up to 12 passengers in an executive/VIP configuration. The Royal Thai Police currently operates nine Airbus helicopters, comprising five H155, two AS365 N3+ and two H175.

Airbus Helicopters Bangkok-based support centre will support the new type. The H175 is fitted with Airbus Helicopters Helionix integrated suite of advanced avionics and 4-axis autopilot, which provides

enhanced situational awareness and improved operational safety by helping to reduce pilot workload and increasing mission flexibility. The H175 has a maximum

take-off weight of nearly eight tonnes and the fleet of 15 H175 helicopters, that are operational today, have flown about 12,000 hours globally. ■





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# STRYKER BOOSTS THAI FIREPOWER



The recent arrival of the M117 Stryker Armored Fighting Vehicle (AFV) into the Royal Thai Army (RTA) marks an important upgrade to the capability of Thai land forces. The first batch of U.S. Army Strykers were presented to the RTA in September, marking their entrance into the Thai land forces inventory. Thailand is the first country outside the United States to operate the Stryker. Thailand

will acquire a total of 60 Stryker infantry carrier vehicles with equipment and support for an estimated cost of US\$175 million via the U.S. Foreign Military Sales (FMS) route.

**“THESE STRYKERS WILL NOT ONLY ENHANCE THE RTA CAPACITY, BUT WILL ALSO**

**ACT AS A TANGIBLE SYMBOL OF FRIENDSHIP, AND A WITNESS TO THE CORDIAL RELATIONS BETWEEN TWO COUNTRIES THAT CONTINUE TO STRENGTHEN ALLIANCES AND PARTNERSHIPS,”**

General Apirat Kongsompong, Commander-in-Chief of the RTA during the handover of the first batch of Stryker AFVs.

The new AFVs are an important step for the RTA’s modernization effort, and the development of RTA doctrine. The RTA’s Stryker Brigade Complex will be located at Chon Buri, a Royal Thai Army base about 55 miles southeast of Bangkok.

The Stryker AFV provides the RTA with a mix of capabilities including infantry transport and reconnaissance; all in a platform that has been combat-tested with significant survivability and capability. The 20 tonne eight-wheeled AFV, is derived from the Canadian Light Armored Vehicle III. Stryker vehicles are armed with M2 Flex .50 cal machine guns and will fill the capability void between light infantry soldiers and heavy mechanized units. The Stryker AFV can get up to speeds of about 80 miles per hour.

The U.S.-Thailand alliance is the longest U.S. treaty relationship in Asia. Thailand is a Non-NATO ally in INDO-PACOM. This alliance continues to be strengthened today through security cooperation events, military-to-military training events such as Cobra Gold and Hanuman Guardian, and the just concluded Indo-Pacific Armies Chiefs Conference and the Pacific Armies Management Seminar.

The Stryker fleet is considered the backbone of the U.S. Army, with nearly 4,700 vehicles fielded. Two upgrades to the Stryker platform include the Infantry Carrier Vehicle --Draagoon (ICVD) equipped with an unmanned turret housing a 30mm cannon with enhanced optics, and the Common Remotely Operated Weapon System-Javelin (CROWS-J), Infantry and Recon Stryker variants with a mounted Javelin capability.

The U.S. Army continues to modernize its Stryker fleet of vehicles through the introduction of the 30mm, up gunned Infantry Carrier Vehicle – Draagoon (ICVD), and the Double-V Hull A1 platform. The Stryker A1 eight-wheeled vehicle will feature vastly increased power, survivability and mobility, while providing extra stowage and seating for nine soldiers, plus a 3-Soldier crew. ■







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