[A Specialized Monthly Journal On Military & Strategic Affairs] 40th Year | Issue No. 482 | March 2012

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The Cover

40th Anniversary of Zayed the 2nd Military College

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الطائرات المقاتلة المتميزة بخصائصها الفريدة وقدراتها العالية لسيادة ساحات القتال
والمزودة بأحدث نظم الأسلحة الدقيقة لحماية السيادة الوطنية وردع المعتدين.

الريادة العالمية في تطوير وانتاج المقاتلات

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The Significance of H. H Mohammed bin Zayed's Courtesy Visits

By:
Staff Major\ Yousef Juma AL Hadad
Editor in Chief

The recent courtesy calls by His Highness Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, reflect the UAE's unique national and social values sown by the late Sheikh Zayed bin Sultan Al Nahyan (May his soul rest in peace). Sheikh Zayed had always treated all citizens as sons and felt it was his duty to offer them a secure and decent life armed with science and faith to carry out development plans, shoulder responsibility and defend the national pride. The late Founder of the UAE Federation was quoted as saying "I have given all my time for my citizens, young and old, male and female, who are the source of my happiness. Their joy is mine and their sorrow is mine too".

This was the seed sown by Sheikh Zayed and the blessed fruit is now reaped by the UAE in the one-family spirit of love, compassion, loyalty, unity, understanding and communication between the leader and his followers.

This good feeling continues to prevail under the wise leadership of His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE and Supreme Commander of the UAE Armed Forces, as a descendant of the wise, far-sighted and generous "Zayed the Benevolent", supported by His Highness Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, who called on a number of citizens recently to have a one-to-one conversation about their daily life, state of affairs and issues of national concern.

This move carries a social message full of sublime values which reflects UAE's solid family-based structure intended for further achievements whereby national welfare and stability are maintained. It is a four decade-long UAE lesson to the world in achieving progress and prosperity, which leads us to the unique UAE formula: citizens come first as the main concern of national development plans, and should be carefully listened to. This fact was driven home by the "Leader of our National March" His Highness Sheikh Khalifa whose address to the nation and senior officials on the 40th anniversary of the UAE Federation highlighted the "need to listen to our people, and to take their suggestions into consideration before plans and objectives are set and decisions are made…it has become essential that the government do whatever it takes to maintain effective interaction with all citizens. It is our duty to listen" •

Editorial

NATION SHIELD

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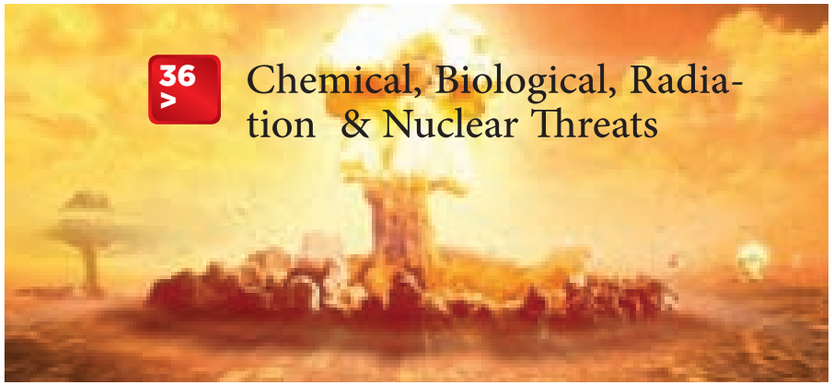

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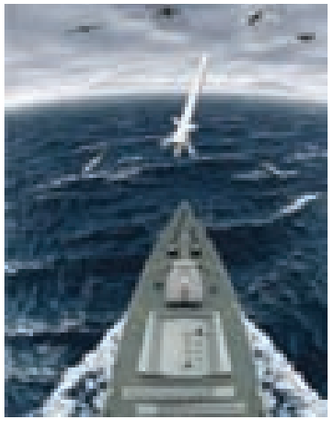

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Zayed the 2nd Military College .. four decades of academic efficiency and keeping up with the latest military sciences and qualifying the national cadres to serve the armed forces.

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Advertisements

H. H. Hazza bin Zayed attends 40th Anniversary Ceremony of Zayed the 2nd Military College

H. H. inspects the parade

Under the Patronage of H. H. General Sheikh Mohamed bin Zayed Al Nahyan, Crown prince of Abu Dhabi and Deputy Supreme commander of the UAE Armed Forces, H. H. Sheikh Hazza bin Zayed Al Nahyan, National Security Adviser and Vice President of the Executive Council of Abu Dhabi attended the ceremony organized by Zayed the 2nd Military College on the occasion of its 40th anniversary in Al Ain.

H. H. Sheikh Hazza said that since 1972, the college has been qualifying officers to be future leaders of the army. He said the military college which was established 40 years ago had succeeded in graduating distinguished soldiers to defend the nation. This success is due to the late Sheikh Zayed bin Sultan Al Nahyan's vision that has developed through the years with the support of H. H. Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE and follow up of H. H. Sheikh Mohamed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai and H. H. General Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the Armed Forces.

The ceremony was also attended by H. H. Dr. Sheikh Saeed bin Mohamed Al Nahyan, H.E. Sheikh Sultan bin Tahnoon Al Nahyan, Chairman of TDIC and Abu Dhabi Tourism Authority and H. E. Lt. General Obeid Mohamed Al Kaabi, Under Secretary of the Ministry of Defense and H. E. Lt. General Hammad Mohamed Thani Al Rumaithy, Chief of Staff of the UAE Armed Forces and Staff Brigadier Pilot H. E. Sheikh Ahmed bin Tahnoon Al Nahyan. Others present included a large number of VIPs and commanders of the armed forces as well as a number of police officers and diplomats and military attachés and the commander and officers of Zayed 2nd Military College.

In his speech H.E. Major General Salim Hilal Surror Al Kaabi, the College Commander welcomed the patron of ceremony H. H. Sheikh Hazza bin Zayed, and the honorable guests, the past commanders of the college and the first graduates of the college including H. E. Lt. General Hammad Mohamed Thani Al Rumaithy, Chief of Staff of UAE Armed Forces. He said the establishment of the College in 1972 was not accidental, but due to the great vision of the late Sheikh Zayed bin Sultan Al Nahyan (God bless his soul) who had foreseen the importance of the armed forces in protecting the country •

Maritime Security meet discusses GCC initiatives

There is no concrete law against intent to commit piracy

H. H Staff Brigadier Sheikh Saeed bin Hamdan Al Nahyan, Deputy Commander, UAE Naval Forces at the conference

We need to build and maximize surveillance capability across the region's territorial waters

The inaugural Maritime Security and Surveillance Conference held recently in Abu Dhabi has highlighted several important themes, including the need for more cooperation across the Gulf countries in maritime surveillance and security operations.

Lieutenant Commander Sheikh Mubarak Ali Y. Al Sabah, Chief of Maritime Operations, Kuwait Coast Guard, discussed in detail about areas of cooperation, and explained that cooperation is the key in tackling the various maritime threats that the region is facing.

One of the initiatives taken by the region's maritime authorities is the establishment of a GCC Maritime Centre in Bahrain. This centre aims to boost security in the Gulf, including that of vital shipping lanes for oil exports. Members of the GCC have agreed to share information and contribute assets to the centre.

"Approval has been given from all GCC leaders," said H. H Staff Brigadier Sheikh Saeed bin Hamdan Al Nahyan, Deputy Commander of the UAE Navy.

According to Lieutenant Commander Sheikh Mubarak Ali Y. Al Sabah, drug trafficking is a primary problem in the Gulf waters where a bust is made every two to three weeks. After each bust, the GCC nations share information about the incident and the lessons learnt.

Currently, another concern is piracy. There are no concrete laws that govern the intent to commit piracy. Fifteen pirates were captured by the UK recently and about 100 pirates were captured by India in the past year. These pirates will be detained till an appropriate court prosecutes them.

"There is no international law against the conspiracy to conduct acts of piracy," said Chris Trelawny, Deputy Director of the Maritime Safety Division of the International Maritime Organisation (IMO). "For a lot of pirates, their equipment is being taken off them and they are being sent back to Somalia. It's not particularly satisfactory but it's a pragmatic reality."

Another key topic that was discussed was how best to build and maximize surveillance capability across the region's territorial waters. Attendees heard about the capabilities of different systems such as High Frequency Surface Wave Radar in coastal surveillance from Frédéric Perret, Product Manager, Thales International, and Space-Based surveillance from Guy Thomas, Science and Technology Advisor, US Coastguard.

Organized by Clarion Events Middle East, the Maritime Security and Surveillance Conference was held with support of the Higher Committee for UAE Civil Seaports and Airports Security and hosted delegates from the UAE, Qatar, Kuwait, Oman, United States of America, the United Kingdom, Europe, NATO and India •

USD 443.8 million perimeter security equipment market in 2012

Leading intrusion detection solutions to feature at ISNR 2012

Europe, the Middle East and Africa (EMEA) are expected to dominate the global perimeter security business which is set to grow into a USD 443.8 million market in 2012, according to electronics market research and consultancy firm IMS Research in a report prepared by Future Fibre Technologies. The region is projected to account for around 41.6 per cent of the market, with the Middle East and Africa expected to be the largest spenders due to the social movements, airport expansions, construction and oil and gas activities occurring in these areas. Video, fence mounted sensors and free-standing sensors remain the industry's three major segments. More global growth is expected due to the increased threat of terrorist activity, expanded government funding, and favorable legislation.

Perimeter intrusion detection and video surveillance systems are extensively used in the Middle East to protect key infrastructure such as air and sea ports, LNG and petrochemical plants, and government facilities. Demand for video surveillance systems throughout the region, for one, is believed to have achieved 10 per cent growth last year, with Dubai alone spending over USD 136 million on such systems.

Fiber optic sensing systems are also gaining popularity due to the advantages of using light rather than electrical signals for transmission and detection. Such systems are comparatively new but have proven their performance over the past decade. Fiber optic installations are durable to many types of environmental conditions, do not require power, can be used over long distances, and are resistant to lightning and electrical and magnetic interference.

With the diverse technologies available for border security nowadays, it is not easy to balance effectiveness, accuracy and costs. ISNR will offer Security decision makers, companies and local and regional security officials a strategic platform to view some of the world's leading perimeter intrusion detection and video surveillance solutions. The event will also enable stakeholders to discuss the best ways to improve perimeter security taking into consideration the Middle East's unique security environments.

"Solutions such as fiber optic sensing systems are well-suited for the Middle East's unique weather and environmental conditions. ISNR will be an excellent venue to introduce large-perimeter protection applications, pipeline security monitoring and communications/data network security measures. " said Adam Wilding-Webb, FFT Regional Director at Future Fibre Technologies, a key exhibitor of ISNR Abu Dhabi 2012.

"Due to its huge oil wealth and its emergence as a powerful economic bloc, the Middle East requires exceptionally high levels of perimeter security. Given the social movements we witnessed last year, there is growing concern over the reliability and effectiveness of existing intrusion detection installations. ISNR Abu Dhabi 2012 provides a venue for the region's governments, businesses and organizations to learn more about what solutions are available and which suit their own requirements," said Mohamad Bader-Eddin, Show Director, Reed Exhibitions Middle East.

ISNR 2012 will cover Border and Transport Security; Intelligence and Threat Assessment; Critical Infrastructure Protection; Emergency Preparedness & Response; Counter Terrorism; and Resilience (Crisis Management). It will be held under the patronage of H.H. General Sheikh Mohammed Bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces. The UAE Ministry of Interior is fully supporting the event, which will gather over 220 exhibitors from more than 24 countries •

Defence Logistics Conference-Abu Dhabi

Defence Logistics UAE will address the latest military logistics strategies, requirements and capabilities

The world's only logistics conference held in official partnership with the UAE Armed Forces, Defence Logistics UAE, is returning to Abu Dhabi from 16th – 18th April 2012. This prestigious event brings together over 80 senior military decision makers from the UAE GHQ, UAE Centres of Excellence and senior officers from across the UAE Air Force, Army and Navy. Defence Logistics UAE will address the latest military logistics strategies, requirements and capabilities that will support the UAE military to prepare for a range of military and humanitarian operations.

In the wake of the Joint Logistics Command that was established last year, one major concern that will be addressed in 2012 is the importance of synchronised and integrated logistical support across forces. The Director of Joint Logistics for the UAE Armed Forces GHQ, Colonel Yahya Shaheen Al Hammadi, will be delivering an opening speech on the development of joint logistics strategies across the Armed Forces.

In order to find ways of overcoming major logistical challenges, improving joint logistics support and gaining up-to-date feedback from recent and on-going operations in conflicts such as Iraq and Afghanistan, the conference agenda includes high-level international speakers from the US Army Central Command (USARCENT), UK MoD, French MoD, Finnish Army Materiel Command, Czech MoD and Danish Defence Command.

Major General Robert Ruark, Director of Logistics CCJ-4, US CENTCOM, will be discussing the ways that the US CENTCOM is strengthening joint force logistics for current operations. Air Vice Marshal Graham Howard, Assistant Chief of the Defence Staff (Logistic Operations) from the UK MoD, will be focussing his presentation on developing integrated materiel procedures to ensure effective equipment production and supply for "broad-based" future conflicts.

Due to the current and urgent logistical challenges that the conference addresses, Defence Logistics UAE is marking its place as the most important and high-level military logistics conference in the region. According to Major General (Ret) David Shouesmith, Former Assistant Chief of Defence Staff of the UK MoD and Vice President of PRTM:

"The Defence Logistics UAE Summit brings together the global military logistics community to debate the key issues arising from the uncertain strategic threat environment and the changing shape of Defence markets. For both military and industry representatives responsible for delivering military logistics and support, these tensions need to be managed at the same time as opportunities seized. The sharing of experience, exchange of views and networking opportunities afforded by the summit make this a 'must-attend' conference for global military logistics decision makers."

The event also features a dedicated Focus Day, with insight into the maintenance, repair and operations strategies shaping future UAE and global military and humanitarian operations and procurement cycles. For more information about getting involved with Defence Logistics UAE or attending, please visit www.defencelogisticsuae.com •

Sagem's Sigma 30 for three European armies

Sagem (Safran group) has won a contract from Cassidian (an EADS company) to supply Sigma 30 navigation and pointing systems to modernize the self-propelled M270 Mars MLRS (Multiple Launch Rocket System) artillery systems deployed by the armies of Germany, Italy and France.

Five artillery regiments in these three armies will be upgraded to the GMLRS (Guided Multiple Launch Rocket System) standard. Based on digital laser gyro technology, Sagem's Sigma 30 is a high-performance land navigation and artillery pointing system designed to operate in even the harshest environments. A component of the EFCS (European Fire Control System) integrated in the rocket launcher system, it is a critical part of today's artillery systems, enabling the very high-precision firing of new unitary warhead rockets to a range of several dozens of km, including in electronic warfare environment. The Sigma 30 system will be coupled to a hardened, latest-generation SAASM (Selective Availability Anti-Spoofing Module) type GPS receiver.

Sagem's selection in this tripartite program further consolidates its offering of laser-gyro guidance systems for state-of-the-art artillery systems deployed by NATO, in Europe and the Middle East: Caesar (Nexter Systems) and Archer (BAE Systems) artillery systems, and 2R2M mobile mortars (Thales).

Artillery solutions by Sagem are now deployed by armies in some 20 countries and cover a wide range of requirements: forward observation systems, networked optronic sensors, navigation and pointing systems, fire control, computers, digital mapping and systems integration.

GD Awarded $24 M F-35 Gun System Contract

General Dynamics Armament and Technical Products, a business unit of General Dynamics, was awarded a $23.6 million contract by Lockheed Martin Corp. for production of more than two dozen GAU-22/A gun systems for the F-35 Lightning II.

The GAU-22/A is a derivative of General Dynamics' proven GAU-12/U 25mm Gatling gun, which the company has produced for more than 40 years. The GAU-22/A is a lighter-weight, four-barrel version with improved accuracy over the GAU-12/U. General Dynamics has been manufacturing GAU-22/A guns for F-35 aircraft since 2009.

"The GAU-22/A's reliability lends a significant advantage in lower aircraft maintenance costs, while the gun's high rate of fire and increased range bring air superiority in tactical air-to-air and air-to-ground combat situations," said Steve Elgin, vice president and general manager of armament systems for General Dynamics Armament and Technical Products.

The first T-346A delivered to Italian Air Force

The first T-346A of the series, registration no. 55144, was delivered to the Italian Airport on January 2012. To take delivery of it at the airport of Venegono (Varese), the personnel of the Experimental Flight Division (EFD) who will then carry out the Initial Operational Test & Evaluation (IOT&E) activities.

These tests will be joined by a second model in the series with registration no. 55145, currently being prepared for delivery.

The T-346A for (IOT & E)

"It is the beginning of the M-346's operating adventure, a moment awaited for years to demonstrate all the strengths of the integrated system – underlined Alessandro Franzoni, Head of the Programmes, Technologies and Industrial Systems of Alenia Aermacchi, during the delivery of the aircraft. It is the test bench the Italian Air Force has been waited for – Franzoni went on – but also by all the other customers who have looked at our aircraft with growing interest".

The event consolidates the historical and constructive co-operation in the training aircraft sector that has bound Alenia Aermacchi to the Italian Air Force for years. Co-operation that began just after World War II with the MB-308 and continued in the years afterwards with the M-416, MB-326, SF-260EA and MB-339 in the "A/PAN" and "CD" versions.

The test activities, to be held at Pratica di Mare (Rome), will last the whole of the first half of 2012.

Bombardier at Bahrain Airshow 2012


C-S 300-1


Cabin

Highlighting the strong market growth potential of the Middle East and Africa, Bombardier showcased its innovative products, technical expertise, and worldwide customer support and aircraft maintenance services at the 2012 Bahrain International Airshow.

Bombardier Aerospace presented a selection of its industry leading business aircrafts. On static display were three aircraft from Bombardier's business jet portfolio; the wide-body

Challenger 605 and Challenger 850 jet as well as the ultra long-range Global Express XRS aircraft. Visitors to Bombardier's interactive state-of-the-art dome had a unique opportunity to view the full-scale passenger cabin and cockpit demonstrators of the game-changing CSeries aircraft.

Business aviation in the Middle East is experiencing sustained growth. Bombardier's latest market forecast for the aviation industry predicts a total delivery of 1,175 business jet deliveries destined for the Middle East over the next 20 years. With a solid fleet of business jets in the region, Bombardier's Learjet, Challenger and Global jets are all represented.

Nexter Munitions : Multi-Annual Contract to supply large-caliber ammunition

The French armament procurement agency Direction has awarded NEXTER Munitions a Multi-Annual Contract for the development, qualification and production of largecaliber ammunition.

The first part of this contract, worth €138m, comprises development and qualification of 155/52-calibre illumination and smoke shells; the supply of modular charges for CAESAR© artillery; the supply of explosive 120-mm cartridges for Leclerc Main Battle Tank and 105-mm practice cartridges for AMX 10 RCR armored vehicles; and resumed production of 100-mm cartridges for the French Navy.

This package contract covers the Armed Forces' requirements for large-caliber ammunition and gives France guarantees regarding the short and medium-term sustainability of the business of its supplier NEXTER Munitions for both development and production of largecaliber ammunition. In addition, the flow of production protects the fabric of suppliers.

The multi-annual nature of the supply contracts also ensures price control in a competitive global market.

NG, BAE for CIRCM Contracts

BAE Systems and Northrop Grumman have been selected to develop Common Infrared Countermeasure (CIRCM) systems for the Army, Navy and Marine rotary-wing aircraft.

Under terms of the $38 million, 21-month technology demonstration contract, BAE will provide its Bold-stroke laser countermeasure system. The system is compatible with BAE Systems' Common Missile Warning System, already deployed on most of the Army's rotary-wing fleet.The Bold-stroke system uses a Modular Open System Approach (MOSA) and non-proprietary interfaces that can support interchangeability and technology insertion, according to the company.

Northrop Grumman's portion of the contract is $31.4 million; the company will work with its partners, SELEX Galileo and Daylight Defense. "We are delighted to have been selected to partner with the U.S. Army on the Technical Demonstration phase of the Common Infrared Countermeasure (CIRCM) program. We look forward to applying Northrop Grumman's world-leading infrared countermeasures experience and expertise in addressing the man-portable air-defense system (MANPADS) threat faced by rotary-wing aircraft," the company said in a statement.

"This decision is a validation of our technology and commitment, and of our 30 years' experience pioneering and delivering this type of technology and the exacting work behind it all, including threat exploitation, jam code development, hardware-in-the-loop simulations, flight tests, and live fire tests," said Bill Staib, director of BAE Systems' Survivability & Targeting Solutions business.

Patria and Volvo Group services for the Swedish Armed Forces

Patria and Volvo Group have signed an exclusive teaming agreement to offer new concepts and partnerships related to comprehensive life-cycle support services for the Swedish Armed Forces' possibly upcoming needs. Patria is in the process of delivering 113 AMV 8x8 armoured wheeled vehicles to the Swedish Army in addition to the about 200 Patria XA 6x6 vehicles already in service there. Volvo Group is a long-term supplier of vehicles to the Swedish Armed Forces and has an extensive network of service and maintenance facilities.

A good example and a forerunner of public and private partnerships in the defence support sector is Patria's subsidiary Millog in Finland. Millog has been already for three years a strategic partner of the Finnish Defence Forces providing life-cycle support services including a wide range of expert services, such as maintenance, repair, technical support, and system configuration management. The partnership arrangement set up for the Finnish Defence Forces' logistics operations has proven to be efficient and profitable for all stakeholders. This concept offers great opportunities for the public defence sector to reduce costs.

"To strengthen our Nordic cooperation and position we wanted to join forces with Volvo Group, which is a very significant partner for us. Together we are able to provide the most comprehensive services and partnerships for defence sector", says Jukka Holkeri, Chief Marketing Officer at Patria Group.

"Patria, with its experience from an extensive partnership with the Finnish Defence Forces, is a perfect partner for the Volvo Group. Together we can offer the best solutions to the Swedish Armed Forces", says Håkan Karlsson, responsible for governmental sales on Volvo Group's Executive Team.

AMV 8x8 armoured wheeled vehicles

Sikorsky Aerospace Signed agreement with SAAB

The defence and security company Saab has signed a major support agreement with Sikorsky Aerospace Services regarding technical maintenance and support for Sweden's BLACK HAWK helicopters.

The support agreement is a framework agreement that establishes the manner in which Saab and Sikorsky Aerospace Services will support the Swedish Armed Forces. The parties have agreed to the first instalment of the agreement to provide maintenance for the UH-60M BLACK HAWK helicopters operated by the Swedish Armed Forces. In Sweden, the UH-60M BLACK HAWK helicopters are designated HKP 16.

Saab will establish a maintenance organisation, supported by Sikorsky Aerospace Maintenance personnel, for HKP 16 comprising helicopter technicians and other technical support staff based at Malmslätt in Linköping, Sweden.

The first helicopters were handed over to the Helicopter Wing in Malmslätt, and at the beginning of 2013, all 15 UH-60M BLACK HAWK helicopters designated HKP 16, will be in operational service.

UH-60M BLACK HAWK

"We are delighted about our collaboration with Sikorsky and the agreement strengthens our commitment to helicopter maintenance. We possess unique technical expertise with regard to support solutions and are certified to conduct helicopter operations. Combined with Saab's stable financial position, this will pave the way for success within the helicopter field. We look forward to a long term partnership with both Sikorsky and the Swedish Armed Forces," says Lars-Erik Wige, Head of the Support and Services business area at Saab.

EADS awarded $212 million for 39 UH-72A Lakota

The U.S. Army has awarded EADS North America a $212.7 million contract to deliver 39 UH-72A Lakota Light Utility Helicopters (LUH) as part of its total acquisition plan. Thirty-two of these Lakotas will be produced in the Army's Security and Support (S&S) Battalion configuration. EADS North America has already delivered 198 UH-72A Lakotas to the U.S. Army, on time and within budget, along with five H-72A versions to the U.S. Navy for test pilot training.


UH-72A Lakota

"We're extremely proud of our track record of on time and on budget deliveries of the UH-72A Lakota to the U.S. Army, Navy and Army National Guard," said Sean O'Keefe, EADS North America CEO. "The successful execution of this critical program is a result of the strong partnership we've built with the Department of Defense over the past seven years. The S&S Battalion-equipped Lakotas further demonstrate this modern platform's flexibility for growth to support an even broader range of demanding missions.

The Lakotas equipped with the S&S Battalion Mission Equipment Package (MEP) will be operated by Army National Guard units across the country. The S&S Battalion MEP, integrated by American Eurocopter, will expand the capabilities of the Army's UH-72A Lakota Light Utility Helicopters, and reflects the platform's adaptability for an increasing number of missions. The current total program of record calls for 345 UH-72A Lakotas to be delivered to the Army and Army National Guard through 2015, along with five already delivered to the U.S. Navy.

Lakota helicopters in the S&S Battalion configuration enable Army National Guard units to seamlessly support state and local law enforcement and federal homeland security agencies in responding to natural disasters, law enforcement and border security operations.

USD 235 M for Falcon Multiband Tactical Radio Systems

Harris Corporation, an international communications and information technology company, has received a US$235 million (AUD$223 million) order to deliver Falcon® tactical radio systems to the Australian Department of Defence in the next phase of its tactical radio modernization program. The radios will provide Australia's armed forces with reliable and secure Type-1 tactical voice and data communications.

Harris will supply the Australian Defence Force (ADF) principally with Harris Falcon III® AN/PRC-152(C) multiband, multi-mode handheld tactical radios for portable line-of-sight and beyond-line-of-sight voice and data communications. The AN/PRC-152(C) is the most widely deployed JTRS Software Communications Architecture-certified handheld radio, with more than 160,000 units shipped to U.S., NATO and other allied forces worldwide.


Harris Falcon III AN/PRC 152(C) Radio

ADSB launches new warship for UAE navy

Abu Dhabi Ship Building can handle more vessels for fit outs, tests and trials

By Sakha Pramod

Abu Dhabi Ship Building (ADSB), the leading shipbuilder and naval support services provider in the Gulf region and a strategic affiliate of Mubadala, on February 15, 2012, launched "Mezyad", the fourth vessel of the Baynunah Corvette Class Program for the UAE Navy and the third vessel under the Baynunah fleet constructed by ADSB. The vessel was launched in the presence of senior officials from the UAE Navy and ADSB.

Senior officials from the UAE Navy and ADSB

Mezyad features the highest level of outfitting prior to launch as it is equipped with propulsion machinery including engine and weapons such as main gun and side guns that were installed in June, September and October 2011. More than 100 kilometers of electrical cables and a large number of piping and equipment have also been installed to complete the outfitting phase of Mezyad, which has also undergone complete grid blasting and painting.

ADSB has also announced that it has completed the extension of the quay wall of its shipbuilding facility by about 155 meters, and has finished construction of a new pontoon and an electrical substation. The expansion program enables ADSB to accommodate more vessels for fit outs, tests and trials.

ADSB servesfour separate market segments, namely, Naval / Military Ship Construction (10m RHIB Assault Boats to 72m Corvettes),Naval Ship Repairs, Refits & Upgrades (basic platform repairs to highly complex combat system upgrades),Commercial Ship Construction (15m Landing Craft to 50m Crew Boats) and Commercial Ship Repairs (basic painting and blasting to replacing of major equipments).

Mohamed Salem Al Junaibi, CEO, ADSB, said: "The launch of Mezyad once again demonstrates Abu Dhabi Ship Building's advanced capabilities and strong commitment to the highest quality standards. The Baynunah Corvette Class Program, which is the largest warship construction program and a first-of-its-kind project in the region, will significantly boost the arsenal of the UAE Navy and enable it to effectively fulfill its constitutional duty of protecting the UAE's maritime territory. The launch of the fourth vessel of the Baynunah Corvette Class Program is certainly an excellent way to start 2012, marking another milestone in our years of excellence and success as a leading shipbuilder and naval support services provider in the region and around the world. Moreover, Abu Dhabi Ship Building has even more reason to celebrate as we announce the expansion of our shipbuilding facility's quay wall, which allows us to accommodate more ships and serve our clients better." The construction of Mezyad had started in May May, 2007. The ship's hull is made of steel and the superstructure is made of marine-grade aluminium.

The Baynunah Corvette Class Program is the biggest warship construction program in the region consisting of six state-of-the-art warships for the UAE Navy. Each of the 72-metre highly-advanced corvettes can be deployed for various missions, including coastal patrol and surveillance, helicopter operations, and peacetime patrols. The Baynunah-Class Corvettes' key features include a stealthy-like superstructure, a helicopter landing deck and a hangar. The Corvettes will also be fitted with Anti-Ship Missiles, and air-defense missiles; 3D Surveillance, Navigation and Fire control Radars and a Multivendor electronic warfare suite.

The Baynunah Program is being undertaken at the world-class ADSB facility in Abu Dhabi. The first of the Baynunah vessels was built at CMN's Cherbourg yard under a subcontract agreement with ADSB. The second Baynunah vessel, named 'Al Hesen', and the third vessel, named "Al Dhafra", were launched in 2011. All six corvette vessels are expected to be delivered to the UAE Navy by 2014 •

Northrop Grumman's Mine Detection Systems to Japan

Northrop Grumman closes first international sale of airborne capability

The Japan Maritime Self-Defense Force has purchased four helicopter-mountable, laser mine detection systems to help protect its coastline and the daily maritime traffic coming in and out of the country's ports. This is the first direct commercial sale of Northrop Grumman Corporation's Airborne Laser Mine Detection System (ALMDS) to an international navy.

"ALMDS will enable the Japan Maritime Self-Defense Force to cover significant distances at the speed of flight using its MCH-101 aircraft. This technology dramatically compresses the time between mine detection and neutralization," said Donna Carson-Jelley, ALMDS program manager for the U.S. Navy. "ALMDS keeps mine countermeasures ahead of the threats."

The mine detection system is laser-based and utilizes streak tube imaging light detection and ranging (LIDAR) to detect, classify and localize near-surface moored sea mines. With high area coverage rate capability, the system transmits a fan-shaped beam of laser light to establish its swath width, and then relies on the forward motion of the helicopter to sweep the light over the water in a "push broom" manner.

Four cameras are arranged to cover the same swath illuminated by the laser fan beam. As images are received by the system, an automatic target recognition algorithm picks out potential mine-like objects and stores their images for classification by shipboard Fleet operators, using computer-aided post-mission analysis tools.

"The addition of ALMDS to the Japan Maritime Self-Defense Force mine countermeasures suite of solutions provides them with significantly enhanced mine detection capability—first developed for the United States Navy," said Pat McMahon, sector vice president and general manager, Military Aircraft Systems of Northrop Grumman Aerospace Systems. "The installation of this capability will also improve the exchange of information between the U.S. Navy and JMSDF during allied operations."

Northrop Grumman is working closely with its industry partners Kawasaki Heavy Industries, Ltd., and Fujitsu Limited on the delivery and installation of ALMDS.

"The addition of our mine countermeasures systems broadens the strong relationship we have with the Japan Ministry of Defense and we are very proud of that partnership. It goes back to the early 1960s," said McMahon. The Japan Air Self-Defense Force has flown the Northrop Grumman-built E-2C Hawkeye airborne early warning command and control system since 1982 •

The MCH-101 with ALMDS

DCI chosen to train crews of Russia Programme

DCI, a service provider with activities on the entire spectrum of defence and domestic security DCI, announced its participation in the programme for the delivery of two BPC (amphibious assault, command and power projection) vessels to Russia by DCNS. DCI, as a partner of DCNS, will be responsible for training in the vessel's operation alongside and at sea for 2 Russian crews (i.e. approximately 350 people).

This service comes under the scope of a contract signed by DCNS in June 2011 with the Russian Federation. It plans the supply to Russia of two Mistral type BPC with associated services including essentially initial logistics and training. This programme is the largest ever undertaken by Russia and a western country in this field.

BPC Vessel

DCI-NAVFCO will be keen to transfer its know-how concerning the operation of a modern vessel. This training will take place in Russia, then in France, at Saint Nazaire for practical training on board. It will start at the beginning of the first semester 2014 for a six-month period •

Lockheed Martin Receives $921 Million Contract For Pac-3

The contract includes launcher modification kits, spares & other equipment

Lockheed Martin received contracts totalling $921 million from the U.S. Army Aviation and Missile Command for hardware and services associated with the combat-proven Patriot Advanced Capability-3 (PAC-3) Missile Segment program.

The contract includes Fiscal Year 2012 (FY12) missile and command launch system production for the U.S. Army and a follow-on sale of the PAC-3 Missile Segment to Taiwan. In 2009, Taiwan became the fifth international customer for the PAC-3 Missile Segment.

The contract includes production of hit-to-kill PAC-3 Missiles, launcher modification kits, spares and other equipment, as well as program management and services. Production of all equipment will take place at Lockheed Martin manufacturing facilities in Dallas and Lufkin, Texas; Chelmsford, Mass.; and Ocala, Fla., as well as the PAC-3 All-Up Round facility in Camden, Ark. Deliveries will begin in the first half of 2013.

"Demand remains strong from the U.S. and our global partners for the combat-proven PAC-3 Missile," said Mike Trotsky, vice president of air & missile defense programs at Lockheed Martin's Missiles and Fire Control business. "In today's uncertain environment, Lockheed Martin remains focused on delivering this important capability to our customers on schedule and on budget."

Lockheed Martin is the prime contractor on the PAC-3 Missile Segment upgrade to the Patriot air defense system. The PAC-3 Missile Segment upgrade consists of the PAC-3 Missile, a highly agile hit-to-kill interceptor, the PAC-3 Missile canisters (each of which hold four PAC-3 Missiles, with four canisters per launcher), a fire solution computer and an enhanced launcher electronics system and launcher support hardware •

PAC - 3 Firing

Etihad Airways operates first biofuel powered delivery flight

Flight of Boeing 777-300ER was the first in the Gulf using biofuel

The 777-300ER using sustainable biofuel

Etihad Airways' flight from Seattle to Abu Dhabi – the delivery flight of the airline's newest Boeing 777-300ER that arrived on January 24 – was the first in the Gulf to be operated using sustainable biofuel.

The 14 hour delivery flight of the airline's newest and most efficient long haul aircraft was operated using a combination of traditional jet fuel and plant-based jet fuel, which is fully certified for use as commercial jet fuel.

James Hogan, Etihad Airways' President and Chief Executive Officer, said: "This flight marks a significant milestone in our efforts to support and drive the commercialisation of sustainable aviation fuel in Abu Dhabi, the region, and globally.

"However, the use of a presently available biofuel is just one part of a more comprehensive long-term biofuel strategy to ensure that we are able to use biofuels to decarbonise substantially an entire industry sector in the long term."

SkyNRG, an Amsterdam-based sustainable jet fuel provider, supplied the fuel, which is based on recycled vegetable cooking oil. As a plant-based source that has been used already for cooking purposes, it qualifies as a bio-based waste stream with a high sustainability value.

Boeing also supported this initiative by supplying their 'fly-away' fuel, provided for every new delivery, as a biofuel blend.

Sustainability is a key aspect of the biofuel production process. Etihad Airways, as a member of the global Sustainable Aviation Fuel Users Group, has committed to a stringent set of sustainability principles when looking at opportunities for biofuel development and use. This includes ensuring that feedstock is non-competitive with food sources and does not jeopardise drinking water supplies.

As part of this commitment and in helping to drive the development of potential feedstock in Abu Dhabi, Etihad Airways is also one of the founding members of the Masdar Institute's Sustainable Bioenergy Research Consortium (SBRC) in Abu Dhabi. This innovative five-year program, backed by over USD 2 million of financial and other support from the airline, supports research into the use of salt water tolerant plants as the basis for alternative aviation fuels.

With new regulations now being imposed on aviation carbon emissions, the commercial viability of biofuel is gaining even more importance. Starting this year, the EU emissions trading scheme (ETS) will require all airlines to pay for emissions and this is likely to lead to other such schemes around the world. Biofuel is considered 'carbon neutral' as the plant biomass takes in carbon as it grows and releases it again during the combustion process, and this means that the use of biofuel as part of the EU ETS would be considered exempt •

Thales enhances its maritime border surveillance capability

FULMAR long lasting UAV is with unique capability of landing at sea

Thales has reinforced its coastal and maritime border surveillance offer with the addition of the FULMAR maritime surveillance and identification UAV system jointly developed with the Spanish firm Aerovisión. This new solution, with its comprehensive integration of sensors, C2 (Command & Control) system and secure communication networks, reinforces the operational efficiency of the coastguard and customs services.

Border surveillance and control are essential for guaranteeing the homeland security of a nation. Faced with increasing risks and threats (illegal immigration, drug trafficking, terrorist threats, etc.), governments demand higher levels of security for their national borders. It is therefore vital that the security services are able to collect all the information necessary to make the right decisions, in order to coordinate actions as efficiently as possible while optimising the resources.

To meet these new challenges, Thales has bolstered its maritime surveillance systems offer with the addition of innovative surveillance and identification capacities, through the integration of the FULMAR long lasting medium-range UAV, a 100% European platform with a unique capability of landing at sea. Jointly developed in Spain by the teams of Thales and Aerovisión, the Thales solution considerably improves the operational capacities of the coastguards by enabling rapid and easy detection of new threats.

In this way, Thales is able to propose a complete and modular solution for coastal surveillance and intervention, built around a C2 system and incorporating multiple coastal sensor data (radar, electro-optical, sonar, Automatic Identification of Ship - AIS etc.), mobile surveillance, communication networks and mobile equipment with intervention capabilities (UAVs, patrol / interception craft, vehicles, etc.).

A UAV for greater reactivity

The information collected using sensors is not generally sufficient for recognising and identifying in time the tracks of interests or the threats. Moreover, the traditional mobile surveillance resources (ships, helicopters, aircraft, etc.) are not always fit for the task since it takes time to scramble them, and at a significant cost in terms of resources.

The FULMAR UAV is more reactive, more efficient and has a very attractive operating cost. As soon as the coastal sensors have located potential threats or unidentified elements, it takes just a few minutes to task the UAV from the C2 and send it to the zone in question in order to remove doubt or confirm the threat. This allows the surveillance system operators to classify and identify the elements that have been overflown and to respond with the most appropriate means of action. This kind of solution offers invaluable operational support during surveillance, rescue and intervention operations.

FRONTEX: Thales demonstrates the efficiency of its solution in a real-life situation

On 19 October 2011, the integration of the FULMAR UAV as part of the Thales coastal surveillance system was tested for the first time in a flight demonstration organised by FRONTEX, the European borders surveillance agency, on the Aktio airbase in Greece. This integration system is a result of a collaboration between Thales and Aerovisión as part of the European Research and Development project WIMAAS. The FULMAR UAV is currently operational in South Asia, where it is fulfilling coastal surveillance missions •

FULMAR UAV

DIMDEX 2012 attracts defence industry leaders to Qatar

Prestigious companies will exhibit cutting-edge products

DIMDEX has the full support of the State of Qatar

Held for the third year under the patronage of His Highness Sheikh Tamim Bin Hamad Al Thani, Heir Apparent of Qatar and hosted by the Qatar Armed Forces and the Qatar Emiri Naval Forces, Doha International Maritime Defence Exhibition & Conference (DIMDEX) has the full support of the State of Qatar.

World-leaders in maritime defence technology are being drawn to Qatar for the third Doha International Maritime Defence Exhibition and Conference (DIMDEX 2012). Industry giants Cassidian, DCNS, Diel, Finnmecannica, Lockheed Martin, Lürssen, MDBA, MTU, Nakilat Damen, Raytheon, RMK Marine, Saab, Thales and many more prestigious companies will exhibit an impressive range of cutting-edge products including electronics, security systems and military craft at the new Qatar National Convention Centre in March next year.

Cutting edge products will be at DIMDEX

In stark contrast to a backdrop of economic gloom in Europe and North America, DIMDEX 2012 is poised to provide an ideal setting for marine defence technology companies from around the world to benefit from the increasingly strong demand in the MENA region for the latest in naval equipment. DIMDEX 2012 will not only feature commercial heavyweights at the exhibition, however, but also host the Middle East Naval Commanders Conference (MENC) that brings senior naval commanders, policy-makers, government officials and analysts together to Doha to discuss key strategic developments in the maritime field.

The Chairman of DIMDEX 2012, Staff Brigadier (Sea) Mohammed Bin Nasser Al Mohannadi said: "DIMDEX is a truly international exhibition and conference, and a leader in its field, which is reflected by the eager return of these global players to Doha to showcase their innovative technologies and benefit from our prosperous market. The participation of numerous industry giants demonstrates that DIMDEX 2012 is both the pre-eminent maritime defence event in the MENA region and a force to be reckoned with on the international defence industry circuit".

Al Mohannadi added: "the combination of big industry and defence procurement decision-makers attending the exhibition, together with favourable market conditions in the MENA region means that DIMDEX 2012 will provide excellent business opportunities for all" •


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Boeing, Thales Select EC135 for Aircrew Training System

Eurocopter aircraft offers proven, low-risk solution

Boeing subsidiary Boeing Defence Australia (BDA) and Thales Australia named the Eurocopter EC135 as the preferred platform for their bid on the Australian Defence Force (ADF) Project AIR 9000 Phase 7 – Helicopter Aircrew Training System (HATS).

"Boeing and Thales' individual expertise and shared strengths, as well as a strong working relationship spanning more than 15 years, have enabled the design of a truly integrated, cost-effective, low-risk aircrew training solution for the ADF," said Kim Gillis, managing director of Boeing Defence Australia. "The Eurocopter EC135 is the ideal helicopter for this mission."

A fleet of more than 1,000 EC135 aircraft worldwide has amassed 2.2 million flight hours to date. The helicopter is part of successful training systems in Germany, Switzerland, Spain, and Japan, and in Australia with the Victorian and New South Wales police forces.

"The EC135 is an ideal training helicopter for defense forces operating new-generation multi-role or combat helicopters, with great maneuverability, high visibility and the most advanced technologies to help instructors perform training missions safely," said Olivier Lambert, Eurocopter senior vice president, Sales & Customer Relations. "Eurocopter is very pleased that the Boeing and Thales team has demonstrated its confidence in our product by selecting the EC135 as their preferred platform."

The Boeing and Thales team conducted a rigorous evaluation of available twin-engine helicopters to identify the aircraft that best met the Commonwealth's training systems goals.

"Thorough flight and ground assessments of the EC135 and its suitability for both ab initio training and as a lead-in trainer to more complex and larger helicopters made it clear the EC135 was the optimum platform to meet the ADF's requirements," said Gillis. "The aircraft's support base, both locally and internationally, presents a significantly lower cost of operation than other aircraft in its class, reducing project-establishment and through-life-support risk."

The Boeing and Thales HATS solution draws on Boeing's sophisticated design tools and extensive aircrew training systems experience, combined with Thales' simulation capabilities, to deliver an ab initio rotary wing training system for all Royal Australian Navy and Australian Army helicopter aircrew.

The Boeing and Thales team has adopted a systems training and engineering approach to development that optimizes training throughput and learning outcomes and reduces life cycle cost, underpinned by a strong focus on safety and military ethos. The solution also draws on Boeing's experience delivering rotary wing training to the ADF for more than 15 years and is backed by the support of The Boeing Company's Training Systems & Government Services business •

EC 135 is an ideal platform for Helicopter Aircrew training

Under the Patronage of His Highness General Sheikh Mohammed bin Zayed Al Nahyan,
Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces

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Rabdan Academy Launches In Abu Dhabi

Under the wise leadership of HH Sheikh Khalifa bin Zayed Al Nahyan and the direction of HH Sheikh Mohammed bin Zayed Al Nahyan, Rabdan Academy has been established as a world class, professional education institution operating in Abu Dhabi. The Academy will launch at ISNR in March 2012.

Accepting their first students in September 2012, the Academy's mission is to train and educate safety, security, defence, emergency and crisis management professionals across all sectors to meet the challenges and threats faced by the region today and in the future.

Rabdan provides integration and co-ordination across the defence and security communities and will lead the nation's approach to combining academic and vocational training in one place.

Dr Faisal Al Ayyan, Rabdan Academy Project Director said, "The Academy is the first in the UAE to provide learning under this dual sector structure. We recognize that students are already receiving excellent instruction from their respective training departments. By coordinating these activities and adding the academic component we are developing strategic thinking and advanced leadership skills and creating accelerated career pathways for UAE Nationals."

Programs range from short courses and Certificates, to Diploma, Bachelor and Masters level study. Multiple exit points throughout the programs allow students to leave the program with a recognized qualification or continue to a higher level qualification. Dr Al Ayyan commented, "Providing life-long learning pathways is so important to today's workforce."

The Rabdan Academy will pioneer a new approach to education and training, firmly focused on integrated, joint and combined activity between all relevant organizations. It will drive the Nation's capability ever higher, in a concerted, collaborative and cohesive manner.

All programs will be accredited by The Ministry of Higher Education and Scientific Research and recognized within the UAE and throughout the world. Rabdan credits will be recognized internationally giving students a wider range of work and study options.

Programs are also designed to fast-track high achieving individuals to allow a more rapid progression through their professional careers. The programs are flexible and recognize students' prior learning and work experiences, giving course credit for students who hold advanced knowledge or experience.

Rabdan Academy enjoys the support of the leading safety and emergency response organizations in the UAE including Armed Forces, Abu Dhabi Police, CNIA, NCEMA, Abu Dhabi Education Council, and Tawazun Holding and works closely with all partner organizations to ensure all programs are relevant to current industry needs.

The Rabdan Academy will operate at the forefront of collaborative training and education for a cadre of UAE specialists in safety, security, defense, emergency preparedness and crisis management. "The integration and co-ordination of education and training opportunities, capabilities and standards, in a cohesive and world-class environment, will result in a continuously improving capability for the protection of the Nation, its assets and its people." said Dr Al Ayyan.

أكاديمية ربدان
RABDAN ACADEMY

UAE-made Nimr stars at International Armoured Vehicle 2012 in the UK

- **Nimr 6x6 Armoured Patrol Vehicle equipped with systems from DRS Technologies on display at IAV 2012**
- **509 Nimr vehicles delivered, 1,800 underway**

Abu Dhabi-based Nimr Automotive, a subsidiary of Tawazun Holding, has attracted a large international attention during its debut appearance at the 11th Annual International Armoured Vehicles (IAV) conference and exhibition, held at FIVE, Farnborough, UK (20th to 23rd Feb 2012).

The first ever UAE company to appear at International Armoured Vehicles, Nimr develops and manufactures a wide range of interoperable defence vehicles that feature high power delivery, high mobility, high versatility and high protection levels.

These multi-mission vehicles are designed and manufactured for applications that range from tactical missions in harsh environments, such as arid deserts, to modern urban warfare, deep infiltration missions, reconnaissance, border surveillance, and support logistics. Depending on the configuration required by the customer, they can perform a variety of roles, including armament or personnel carrier, logistics vehicle, ambulance, and Command and Control vehicle.

A Memorandum of Agreement was signed between Nimr and DRS Technologies, part of the Finmeccanica Group, on possible equipping of Nimr vehicles with tactical vehicle electronics, electro-optics, vehicle power management, and tactical communications made by DRS Technologies. This combination of Nimr's vehicle engineering capacity and DRS Technologies' systems and integration skills can equip these vehicles to deliver world class C4ISTAR solutions, including battle management, close-in situational awareness, reconnaissance and surveillance, and secure vehicle and tactical communications. In partnership with other Finmeccanica businesses, DRS can also integrate highly effective electronic countermeasures against the Improvised Explosive Devices (IED) threat as well as a range of stabilised overhead weapon systems capable of meeting most of the operational scenarios the vehicles are likely to encounter.

On display at International Armoured Vehicles is the Armoured Patrol Vehicle – 6x6 (pictured) fitted with systems provided by DRS and its sister companies Oto Melara and Selex Elsag.

Speaking at the International Armoured Vehicles conference, Mr Hamad Al Neyadi, Chief Strategy Officer of Tawazun and Chairman of Nimr Automotive, drew attention to the vision of Nimr which is to establish a globally recognized and sustainable defence automotive business, contributing to the diversification of the UAE economy and enhancing local skills and experience. Full production, assembly and quality management facilities are being installed at Nimr's Abu Dhabi plant and comprehensive lifecycle management capabilities are already in place.

To date, over 509 Nimr vehicles have been delivered, including both the 4x4 and 6x6 versions, and an order book of 1800+

Please visit us at Tawazun stand No. AT06 at ISNR Exhibition, at the Abu Dhabi National Exhibition Centre, from 19-21 March 2012 to get further information about Nimr.

TAWAZUN

Cassidian provides leading edge security technology

Cassidian is a leader in consistent and effective security solutions

Cassidian is exhibitor at ISNR 2012 (International Security & National Resilience) exhibition and conference in Abu Dhabi from 19 – 21 March, Booth No 2250, Hall 3. Cassidian is completing large integrated and resilient security systems to ensure global and coordinated answers.

In the Middle East, Cassidian is well established in delivering consistent and effective security solutions to optimize ways of detecting, preventing and responding threats such as terrorism, piracy or natural disaster.

Cassidian is able to procure high-level integrated solutions to increase surveillance and intelligence capability to process sensitive information about critical areas in real time for civil and military authorities.

At ISNR, Cassidian shows its innovative secure communications solutions provided to public safety, civil defence entities, and transport and other mission critical users worldwide with a strong footprint in the Middle East. The latest delivery to the region has been the new Yas Island Event Management Room, that was successfully operated to ensure the security of all events and concerts around the 2011 Formula 1 Etihad Airways Abu Dhabi Grand Prix race and all types of events in future.

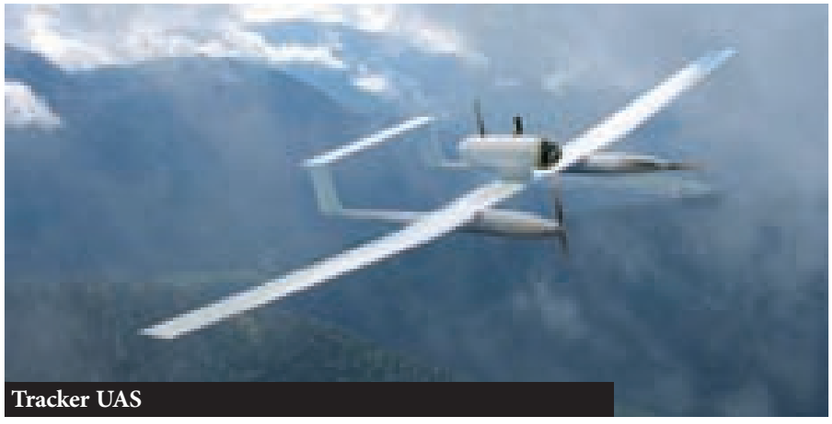
Cassidian will present as well its comprehensive offer for Cyber Security, ranging from Services to Solutions and Products. Together with its partner Regency, Cassidian has created a unique offering for the securing and monitoring of Industrial Control Systems, which aids the defence of Critical National Infrastructure.

The Unmanned Aerial Systems (UAS) Tracker and Atlante will be shown at the Cassidian stand. Tracker has been developed in partnership between Cassidian and subsidiary SurveyCopter, which is providing the aerial vehicle and the cameras. Cassidian has specifically developed a ground station as well as a high-speed secure data link, which gives the system a genuine long-range capability, even in severe weather conditions.

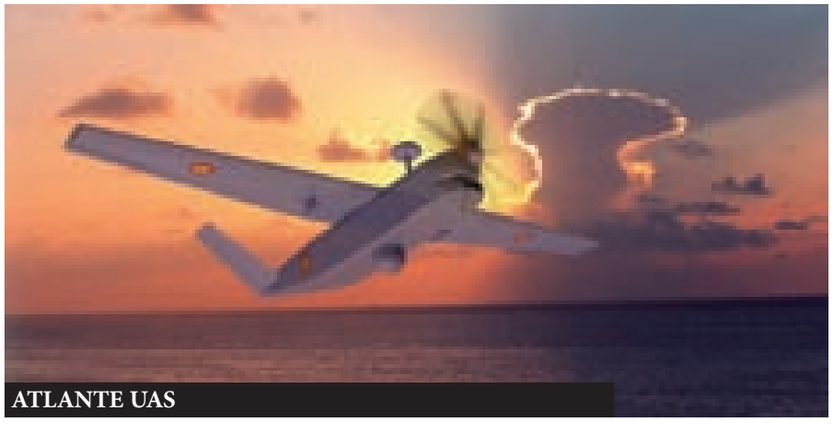
Atlante is a tactical UAS designed by Cassidian in Spain, following the Customer High Level Technical Requirements from the Spanish MoD. and is operated by the Ejército de Tierra to carry out target identification, shoot correction, damage evaluation operations, among other ISTAR missions (intelligence, surveillance, target acquisition and reconnaissance).

Atlante presents a system formed by four or more air vehicles, a ground control station, a ground data terminal, a transport, launch and recovery unit, a remote video terminal and a maintenance unit. It offers the capability of operating 24 hours a day, amongst any meteorological condition and it doesn't need take-off/landing strips, although it is provided with a landing gear system designed to operate from unprepared runways.

Cassidian is developing advanced mobile capabilities and services related to threat detection and site protection. Thus, the luggage inspection system (ULIS) will be presented at the show as well •



Tracker UAS



ATLANTE UAS

Bayanat: A Leader in Geospatial Products & Services

Our primary goal is to enhance the strategic capabilities of the UAE

Bayanat is a wholly-owned Mubadala company that emerged from the commercialization of the UAE Armed Forces Military Survey Department (MSD). The MSD was formed in 1974 to provide the UAE Armed Forces with a dedicated mapping and surveying organization. Since then, MSD has developed a high level of expertise and experience which Bayanat upholds as part of its rich legacy.

Khaled Al Melhi, the Chief Operating Officer of Bayanat, shared his thoughts about the company during an extensive interview with the Nation Shield.

"Our primary goal is to enhance the strategic capabilities of the UAE and deliver high-quality geospatial products and services at the national level to both our government and commercial sectors. Our team of geospatial services professionals is well-versed in geospatial data acquisition, processing and analysis, visualization and cartography, GIS applications development and geospatial consultancy services."

Mr. Khaled explained that Bayanat's expert staff uses state-of-the-art equipment and technology to ensure timely and effective service delivery. He added that his company's distinctive services portfolio is not just limited to end-to-end spatial data services delivery but also encompasses gesospatial consultancy services.

"While we are recognized as a national leader in providing geospatial mapping and surveying services, we aspire to enrich and expand our services value offering to cover the full spectrum of geospatial services," said Khaled. "We aim to be the community's preferred partner for exploring the geospatial possibilities within and beyond the UAE. An important part of our mission is to facilitate the growth of the UAE, partly by helping businesses make the right decisions based on innovative solutions developed by Bayanat experts that put a premium on data quality and accuracy."

According to Mr. Khaled, Bayanat owes its success to its commitment to its core values, which includes integrity and transparency, excellence, a customer-centric approach, a delivery-focused mindset, and people development. He also attributes the company's achievements to the integrity and dedication of its employees, who are inspired by the vision and values of the country's leaders.

Backed by three decades of industry experience, Bayanat offers a "one-stop-shop" for all the geospatial services and data needs of its clients. The company enjoys an edge in delivering

Khaled Al Melhi, the Chief Operating Officer of Bayanat

Backed by three decades of industry experience, Bayanat offers a "one-stop-shop" for all the geospatial services and data needs of its clients

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world-class professional services in geodesy and field surveying, aerial survey and image processing, hydrographic surveying, spatial data management, cartography and visualization, and printing.

Moreover, Bayanat's rich experience across the UAE has provided it with unique insights into various industry requirements. The core industries serviced by the company include national defense and security, federal and local government, infrastructure and development, transportation, oil and gas, utilities, public safety and emergency, environment, real estate, and tourism.

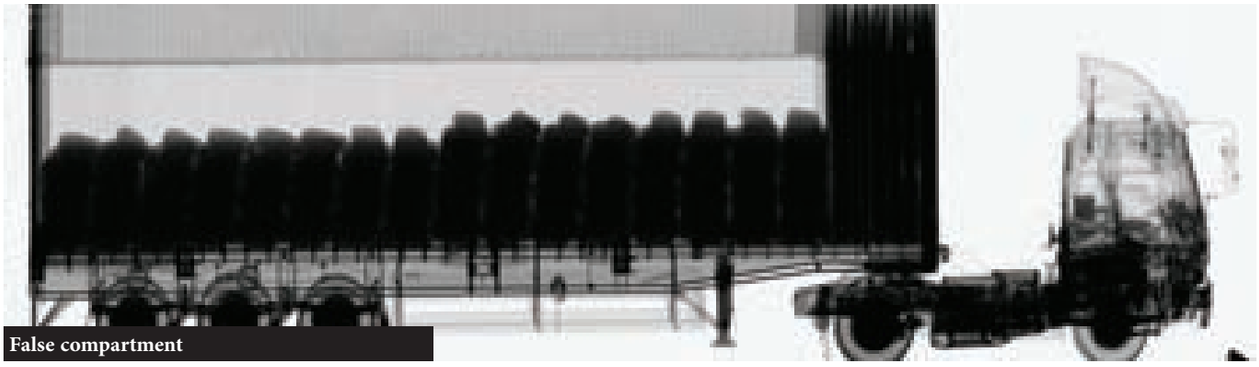
"We offer an extensive array of field survey solutions – including geodetic observation, ground control and field completion – to assist our clients in metropolitan and regional areas with their urban planning and development, construction, engineering and mapping requirements. Our dedicated team of experienced project managers, engineering surveyors, survey assistants and computing professionals ensures that the unique requirements of our customers are carefully met and exceeded," added Mr. Khaled.

Mr .Khaled also revealed that Bayanat participated in the "Emergency and Crises Management Conference" that was recently held in Abu Dhabi for the first time, both as a supporter and as an exhibitor. "We joined the conference as a major supporter and exhibitor for geospatial services and solutions primarily to disseminate and promote the importance of our industry's services in emergency and crisis management field. The event also served as an ideal platform for us to highlight our capabilities in the integrated geospatial services for field, sea and air survey applications focusing on national security and defense mechanisms.

"The conference enabled us to closely interact with decision makers, customers and strategic partners. We discussed strategic projects, our plans to enhance our local and international crisis management capabilities and our exceptional ability and readiness to support government establishments in all fields with a number of government entities. We successfully presented our company as a leading provider of survey services and geospatial information and demonstrated our added value in supporting national security applications. We also showcased the latest surveying services and activities and demonstrated their potential through the use of laser surveying techniques, design and simulation of 3D models," concluded Mr. Khaled •

Total border security screening

Rapiscan Systems provides range of Security Screening technologies



False compartment

There have been many high profile cases involving serious threats to international security, through banned substances and devices being brought over international borders, each of which has presented new challenges to the security industry. With the terrorism threat ever present, extra scrutiny should be exercised through implementing the very best in security screening systems. Most people only experience border security in airports, however the need for effective screening of people, cargo and vehicles at all border crossing is increasing. Rapiscan Systems provides the widest range of Security Screening technologies to enable its customers to keep all their borders secure whether on land, sea, or air.

Today, there is an increased demand for advanced cargo inspection systems that can efficiently scan cargo whilst moving through entry/exit points such as sea ports. Manufacturers need to develop solutions that focus on enhanced inspection capabilities, to increase operational effectiveness for high speed scanning.

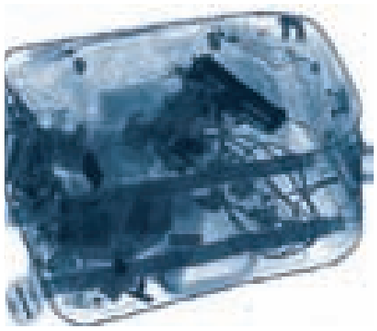
Rapiscan Systems delivers market leading technology, constantly focusing on the threat and contraband detection needs and the operational requirements of its customers. With this in mind, they consistently develop new, innovative and flexible approaches to scanning cargo. The Rapiscan Systems range of Eagle modular fixed, portal, gantry and mobile systems offers the fastest throughput systems available today. For example, the Rapiscan Eagle R-series Rail scanner is a high energy rail inspection system, which will efficiently scan around 1 million cargo containers per annum as they travel on trains at speeds of up to sixty kilometers per hour.

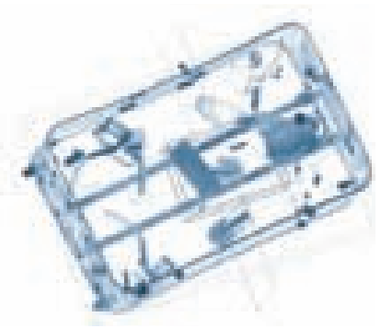
Rapiscan Systems Dual View Advanced Technology X-Ray machines have been designed specifically for aviation and other high security applications to offer improved visual

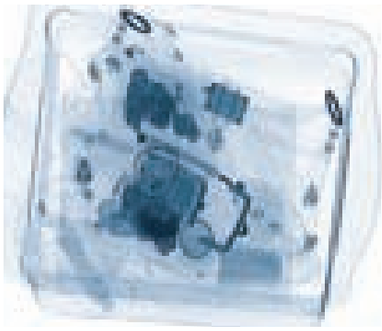
Rapiscan 620DV-MONITOR

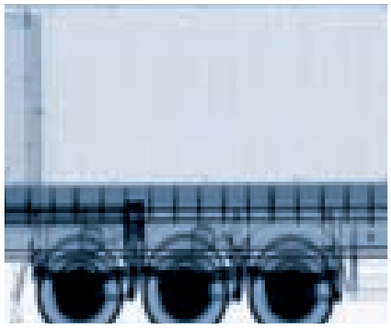
processing and detection of explosives and liquid threats. Dual View technology is one of the most advanced checkpoint inspection systems in the world because it takes multiple views of a passenger bag, or air cargo, in the same time that it takes existing X-ray machines to show a single view. Varying angles enables screeners to more readily identify potential threat objects, that include liquid explosive threats and other improvised explosive devices (IEDs). The high resolution images mean that, for example, there is no need for time consuming manual inspections and the actual scanning time is lessened, delivering a faster screening process.

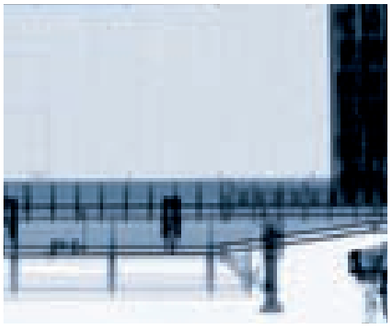
Selecting the optimal mix of security screening solutions to keep borders secure is complex; with each entry point presenting its own unique challenges, both in terms of physical layout and patterns of passenger, cargo and transport types entering and leaving the facility. These patterns also change, driven by variation in the threat landscape, and customs priorities. It is important therefore for the selected screening solutions to be capable of future enhancement to allow authorities to maintain and enhance their competitive position •

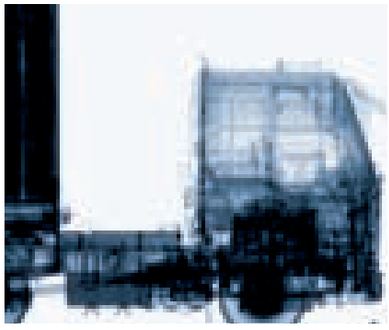












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Sprung Structures located in Manama Bahrain is a member of the Sprung Group of Companies in business since 1887, which has achieved international recognition by providing shelter solutions for thousands of different applications in over ninety countries throughout the world.

Sprung is the inventor of the stressed membrane structure, engineered to accommodate the world's need for enclosed space quickly and economically.

This innovative building solution utilizes architectural membrane panels placed under high tension within a non-corroding aluminum substructure. Sprung provides an optional superior performing energy efficient insulation package. Widths range from 9 meters (30') to 60 meters (200') by any length.

The non-corroding aluminum substructure and our high-quality performance fabric provide for an incredibly long lifespan. The performance architectural membrane provides all-weather protection from the elements with up to a 20-year guarantee.

The benefits of Sprung structures include: speed of delivery and construction, large clear span interior, energy efficient insulation package, relocatable design, limited foundation requirements. Each Sprung structure is manufactured from the highest quality products and materials, and individually tested using strict performance measures. With a specialized high-strength aluminum alloy, our substructure has an unlimited lifespan. Sprung structures are engineered to meet or exceed the requirements of most building codes and standards. Sprung structures are generally available within 3 weeks of order.

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Military applications including aircraft hangers, on-site warehousing, vehicle maintenance, logistics storage, MWR Facilities, dining and food services, access control point shelters, bulk storage, maintenance shipping and receiving, and weather sensitive material enclosures •

Saab delivered its 100th DiRECT CR mission recorder

Saab delivered its 100th DiRECT CR mission recorder. DiRECT CR is a digital recording and replay system for video, audio and data, suitable for both new and legacy airborne platform in military as well as security and police missions.

Airborne recording and the replay of sensor images, such as color HDTV cameras and infrared, are becoming increasingly necessary during helicopter and fixed wing aircraft missions. The DiRECT CR System is developed to meet the demanding recording requirements for operators like the police, boarder patrol, surveillance and the military to gain maximum information and experience from their flights. User base for Saab's DiRECT CR spans the globe from the North American continent to the east of Asia.

DiRECT CR records multiple channels of high quality video, audio and data during hours of flight. Video from sources such as turreted sights, radars, map displays, and hoist supervising cameras is recorded on multiple software-configurable high and standard definition video recording channels. Data is being recorded from ARINC-429 and 1553B busses. The recording drive is hot-swappable. Most users utilize the DiRECT CR's onboard video replay feature which has powerful replay functions. Onboard replay can take place whilst recording the full complement of recording channels. Ground replay is made possible by Saab's Ground Replay Station software application that can be run on a Laptop or pc •

Saab DiRECT CR

Chemical, Biological, Radia-

Prevention Is Better Than Cure

The rising tension across the waters of the Gulf must be fuelling, yet again, fears of some form of asymmetric surprise attack. Once more the neglected subject of Chemical Biological Radiation and Nuclear and its prevention is forcing its way up the agenda. Furthermore, strange happenings in different corners of the CBRN spectrum are raising concern, the resurgence of bird flu and the H1N1 virus, for example.

By:

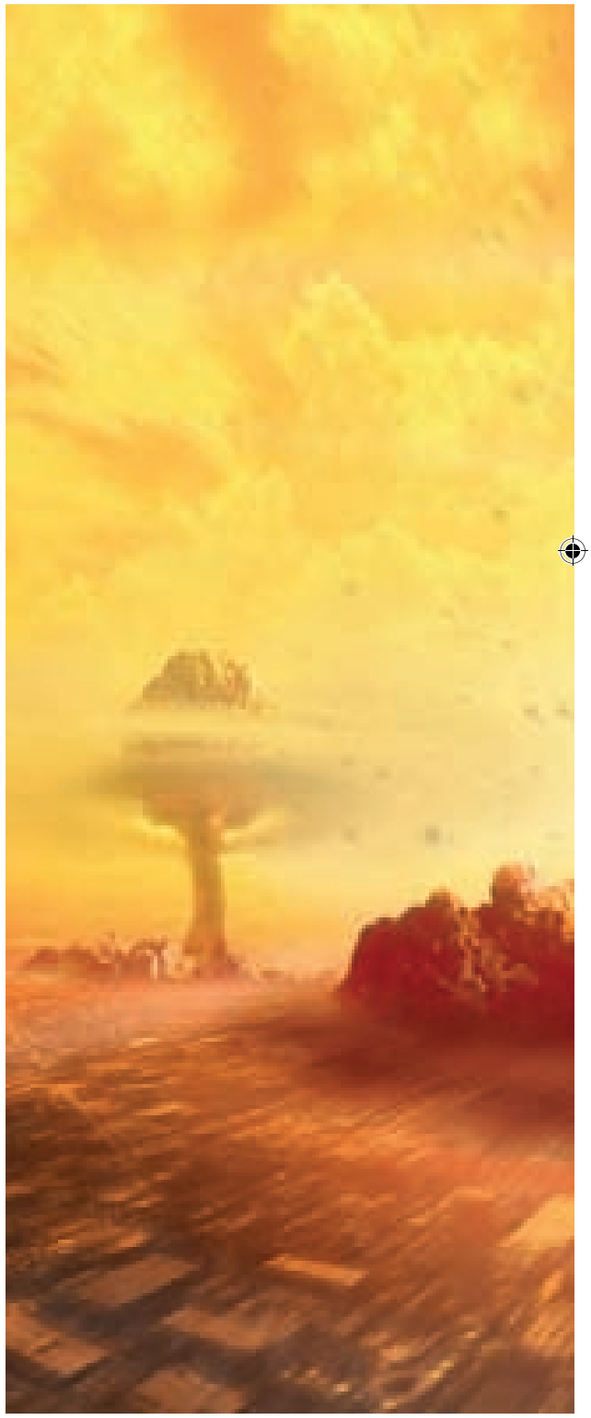
Robert Fox

The publicity and focus of world media on great international events like the 2012 London Olympics this summer present a major security worry about terrorist groups using new variants of weapons of mass destruction. The year 2012 is already seeing a flurry of debate about nuclear proliferation, from Iran to North Korea. Once again the argument focuses on the Nuclear Proliferation Treaty and its functionality and value in a multilateral nuclear world.

The message is that CBRN prevention is better than cure. Mercifully the occasions on which massive radiation, chemical or biological weaponry of any description have been actually used are relatively few. However, there is an accumulation of evidence that a number of violent extremist groups have developed an unhealthy interest in such methods and weapons over the years.

Developing Capabilities.

Armed forces across the world, particularly in Nato countries, have laid great emphasis on CBRN preparation, drills and training and equipment. In many of them, the US, UK and Canada, the emphasis has been as much on civil agencies and preparation as the military. A number of major exercises have been held for emergency response to a major CBRN incident – the results have proved sobering, in that most showed that the agencies have a long way to go. Command and control seems still to be a major issue – which was revealed in the bomb attacks on the London transport system on July 7th 2007.



tion And Nuclear Threats

Nuclear proliferation is a major threat

The authorities, federal and local, received a major wakeup call when civil response agencies were shown to be so badly lacking in the aftermath of Hurricane Katrina in the autumn of 2005. This happened despite the innovations such as the Homeland Security department following the September 11th attacks by al Qaeda.

In many respects in the military response, with the designation of specialist units and training and doctrinal centres, much of the thinking seems still to be rooted in practices evolved in the Cold War. In both Nato and the Warsaw Pact, the response was largely from large force formations, to which a few specialized units were added. Interestingly Czech specialized units, prominent in the Warsaw Pact order of battle before 1989, still lead in this area of expertise in their new role in Nato.

Its is worth considering the spectrum of threats an incidents in asymmetric weaponry and devices in the recent past in order to assess what needs to be done in terms of both prevention and cure in the frightening world of CBRN.

The message is that CBRN prevention is better than cure

Information

CBRN: Chemical, Biological, Radiation and Nuclear.

IED: Improvised Explosive Device.

IAEA: International Atomic Energy Agency.

Sarin: A man-made and lethal chemical warfare agent

The Threat

Recently attention has been diverted away from actual and potential terrorist use of CBRN weaponry by the intensity of the attacks in a number of theatres with the cheapest and deadliest tactical devices in the terrorist armoury – the IED and the suicide bomber. It had been feared with some justification that the terrorist might use chemical agents, though this threat receded as the violence worsened after 2003.

But both the interest and potential use of these kinds of weapons has been present across the 'arc of instability' stretching from the eastern Mediterranean through the Caucasus and Gulf region to central Asia and south into the Indian subcontinent.

To give examples In 1995 Chechen separatists left a bomb containing cesium-137, a radioactive isotope, in Ismailovsky Park in Moscow. Three years later an explosive mine attached to radioactive material was found near the railway station in the Chechen capital Grozny. Neither device detonated

Previous CBRN Incidents & Analysis

To assess the potential threat from CBRN, it merits looking at a series of incidents and use of such material, some purely accidental but many deliberate. It is this that led the US federal commission on CBRN to conclude in 2008 "unless the world acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere by the end of 2013."

The first indicator of concern is the consequences from major accidents at two civil nuclear plants. At Chernobyl in 1986 the meltdown of a reactor at the power plant leaves pollution to this day, and according to Greenpeace at least a quarter of a million suffered directly with various forms of cancers. The damage of the Fukushima nuclear plant by a tsunami in March 2011 appeared equally catastrophic, though the human damage seems lighter. The lesson for CBRN protection and prevention is the same in both cases – the evacuation and safety procedures proved woefully inadequate.

In the Cold War both major protagonists studied intensively the proposition of a winnable nuclear war. In the Cuban missile crisis of October 1962, they came close to one. In 1983 Exercise Able Archer emphasized to the US that probably a nuclear exchange would lead to catastrophic loss and strategic defeat. It should be noted that there was a strong major nuclear alerts over threats or damage to the US nuclear arsenal in the latter stages of the Cold War, with feared radiation leaks – one after a lightning strike in Italy which hit partially armed nuclear bombs.

Two deliberate releases of nerve and chemical agents should give particular pause for thought for those planning a CBRN prevention strategy. Chemical weapons, especially mustard gas, had been deployed with Iraqi forces through the latter stages of the Iran-Iraq war of 1980 – 1988. Most commonly they were to be fired in artillery shells to counter Iranian human wave attacks by fanatical Iranian youths. It is too easy to forget how pervasive such weaponry was. Forward units in the confrontation over Kuwait 1990-1991 carried flimsy counter CBRN kit, mostly masks, shoddily produced suits in some cases, and a stock of fairly primitive anti nerve agent pens. I recall as a defence correspondent coming across large quantities of such kit on the battlefield outside Kuwait City in February and March of 1991. It was as if the front line Iraqi units expected to

Prevention is better than cure

be attacked by chemical weaponry, even if they were not actually going to use it themselves. The same happened with the American led incursion of 2003, when stockpiles of masks and suits were found by British troops round Basra. It should be noted that Libya was discovered to have had an ambitious chemical weapons programme after the Gadaffi regime agreed to disarm in 2004 – with some suspicion that he did not yield up all his CBRN stock to the end.

As well documented is the attack with sarin by the Aum Shinrikyo extremist cult on passengers on the Tokyo metro railway in the morning rush hour of 20th March 1995. Some 13 passengers were killed by the release of the sarin, and 1,100 injured, most with temporary blindness though 93 had severe life-changing injuries. The attack by the cult caused chaos throughout the public transportation system.

CBRN Defence

On the protection side, there is a great deal of distance to be covered. The UK has its dedicated CBRN regiment based on the Royal Tank Regiment and the RAF Regiment. Nato has designated its own CBRN doctrine, school, and multi national battle group – drawing undoubtedly in the deep tactical expertise of the Czech forces in this field.

The USA is building up its own civil and military dedicated CBRN units, including the US Army CBRN School at Fort Leonard Wood, Missouri. This has evolved from training teams set up to combat gas attacks on the Western Front in France in 1918.

In some respects the US and other first class world forces still give the impression of playing catch-up where the possibilities of asymmetric, eccentric development of exotic weaponry still seems almost limitless. A strong warning of this was given in an editorial of January 2012 in the New York Times warning of the dangers of a resurgent global epidemic of the H5N1 bird flu virus. It called for successful experiments to produce the virus in laboratories in Rotterdam, suggesting a human pandemic could kill millions. The findings are a gift to terrorist, the editorial claimed. "We respect the researchers' desire to protect public health," says the New York Times. "But the consequences, should the virus escape, are too devastating to risk"•

If a target can be laser tracked -

Laser Joint Direct Attack Munition: Smart, affordable and accurate

Over the last decade, armed forces worldwide had to focus mostly on irregular and counterinsurgent warfare. In the modern battle space, the opportunity to detect, identify, and strike a target is often reduced to seconds. Datalink and beyond-line-of-sight (BLOS) secure communications are becoming more important as the pace of combat operations increases.

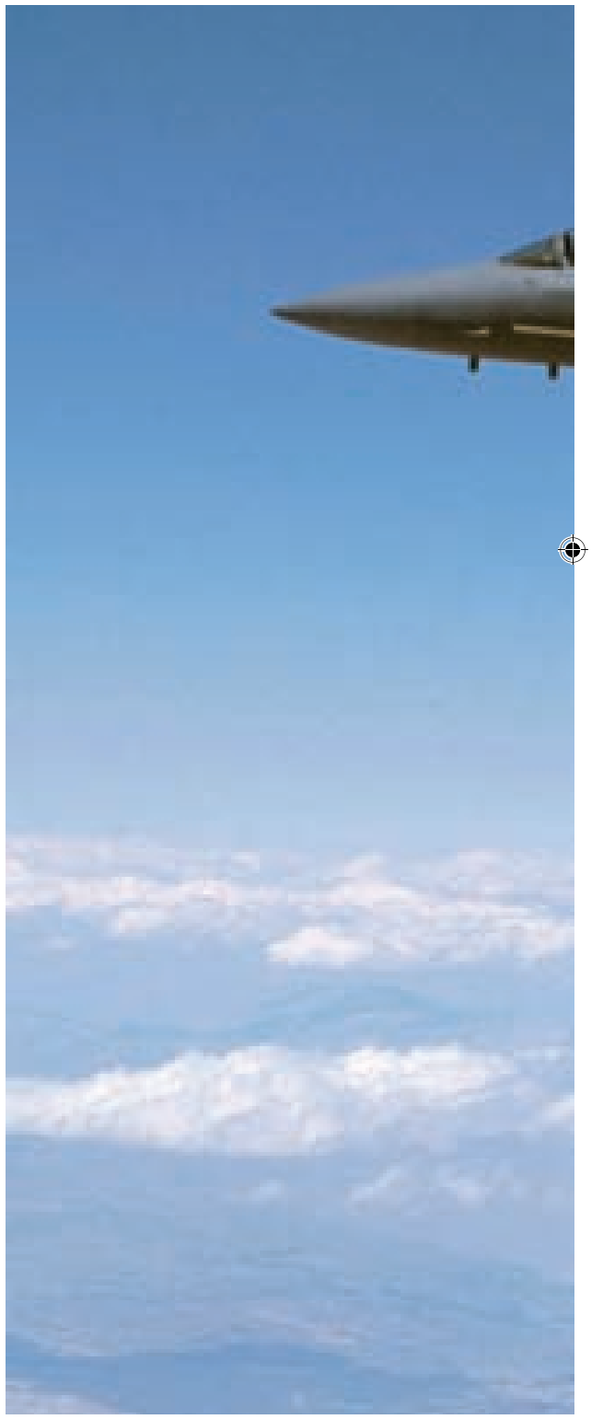
Recent conflicts in Iraq, Afghanistan and Libya were characterized by bombers engaging in time-critical missions. Bombers need more advanced tools for in-flight mission planning and target prosecution. Advanced weaponry including the GBU-31 Joint Direct Attack Munition (JDAM) becomes vital for the mission. Known as the world's most accurate bomb guidance kit, JDAM is a GPS-aided, near-precision weapon used extensively by the U.S. Air Force, Navy, Marine Corps and global allies in combat operations, including Afghanistan and Iraq. Boeing has produced more than 215,000 JDAM guidance kits since 1998.

Precision Laser Guidance Set

An existing JDAM becomes a Laser JDAM with the installation of the Precision Laser Guidance Set (PLGS). Laser Joint Direct Attack Munition (LJDAM) consists of the standard JDAM guidance tail kit as well as a laser guidance kit that acquires and tracks laser target signals. The weapon is designed to accurately and effectively engage stationary and fast-moving targets on land and at sea. The laser guidance also provides accurate alternative targeting in a Global Positioning System-denied environment.

History

In late 1991, the U.S. Air Force and U.S. Navy formulated common requirements for a new class of low-cost general-purpose precision guided bombs. The program was initially labeled AWPGM (Adverse Weather Precision Guided



LJDAM will hit it

Multiple JDAM drop

Munition), but was eventually named JDAM (Joint Direct Attack Munition).

After the USAF had successfully demonstrated a GPS-aided inertial guidance package in 1993, the goal for JDAM became the development of a low-cost GPS add-on guidance kit for existing 1000 lb and 2000 lb class "dumb" bombs. In April 1994, development contracts were given to McDonnell Douglas company and Martin Marietta. After wind-tunnel tests of both designs, McDonnell Douglas was selected in October 1995 as prime contractor for further development of JDAM. Merger of Lockheed Corporation with Martin Marietta in 1995 led to creation of Lockheed Martin and Boeing bought McDonnell Douglas in a historic deal in 1996.

The first JDAM kits were delivered in 1997, with operational testing conducted in 1998 and 1999. During testing, over 450 JDAMs were dropped achieving a system reliability in excess of 95% with a published accuracy under 10 meters. In addition, there have been tests involving multiple weapon drops with each weapon being individually targeted.

JDAM flight testing began in 1996, and the first LRIP (Low Rate Initial Production) contract was awarded in April 1997. In December 1998, JDAM officially reached IOC (Initial Operational Capability) on the first platform, the USAF's B-52H. Other aircraft soon followed, and today all U.S. bombers and strike aircraft can carry JDAM weapons. JDAM also has 18 international customers.

Laser JDAM

The Laser Joint Direct Attack Munition (Laser JDAM) expands the capabilities of the JDAM. The JDAM kit consists of a tail section that contains a Global Positioning System or Inertial Navigation System and body strakes for additional stability and lift. The laser sensor is a modular kit that is easily installed in the field within minutes to the front of existing JDAM weapons. If a laser isn't needed for a given mission, a standard JDAM can be used. The laser-guided JDAM simply adds additional capability to the outstanding GPS or INS all-weather capability current JDAMs offer, turning the JDAM into one of the most versatile weapons available. Laser JDAM now adds the flexibility to prosecute targets of opportunity, including mobile and even maritime targets.

The Laser JDAM development and testing cycle was completed in less than 17 months after it was identified as an urgent operational need in early 2007. Boeing delivered the first production Laser JDAMs to the U.S. Air Force in May 2008. Laser JDAM was successfully employed by the Air Force in combat in Iraq in August 2008.

Characteristics

Currently, tail kit variants are integrated with the MK-84 2,000-pound and BLU-109 2,000-pound (900-kg) warheads (GBU-31). MK-83 1,000-pound (GBU-32) and MK-82 500-pound (225-kg) warheads (GBU-38) are in production to deliver the cost-effective JDAM. When employed, these weapons have proven highly accurate and can be delivered in any flyable weather. JDAM can be launched from more than 15 miles from the target with updates from GPS satellites to help guide the weapon to the target. Laser JDAM has been integrated with the GBU-38. Follow-on integration with the GBU-31 and GBU-32 is planned.

JDAM is ordered by the U.S. Department of Defense for use by the U.S. Air Force, U.S. Navy, and U.S. Marine Corps. Anticipated applications and development plans include: Integrating the kits for use with additional aircraft, extending the range, reducing the size, improving the accuracy, providing low-cost terminal guidance and adding a laser sensor.

Current status

Boeing completed the development and testing cycle for its Laser JDAM less than 17 months after it was identified as an urgent operational need in early 2007. The company delivered the first production laser sensor kits to the U.S. Air Force in May 2008 and to the U.S. Navy in October 2008. Laser JDAM was successfully employed by the Air Force in combat in Iraq in August 2008.

The initial delivery to the Navy followed the completion of an extensive LJDAM flight test program including tests on the F/A-18C/D and AV-8B Harrier aircraft. During the tests, LJDAM successfully engaged both stationary and moving targets, including one traveling at 85 miles per hour. Additional flight tests and clearance activities on the F/A-

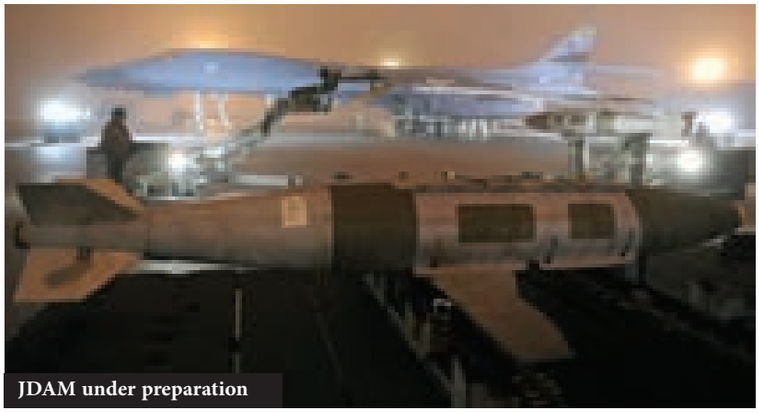
Customers

U.S. Navy and U.S. Air Force currently use Laser JDAM. It is operational on U.S. Air Force F-15E and F-16 and U.S. Navy F/A-18 and A/V-8B platforms.

The U.S. Navy's first Laser JDAMs were delivered in October 2008. In March 2010, the Navy selected Laser JDAM to satisfy its Direct Attack Moving Target Capability (DAMTC) requirement. In March 2011, Naval Air Systems Command (NAVAIR) awarded Boeing an $8 million contract that represents the first major production order for 700 Lot 1 Laser JDAM sensor kits.

Germany became the first international customer for Laser JDAM in 2008.

JDAM on deck



JDAM under preparation

Laser JDAM on F16

18E/F Super Hornet were conducted later.

In February 2010, the Navy selected Laser JDAM to satisfy its direct-attack moving target capability (DAMTC) mission requirement. Naval Air Systems Command awarded an $8 million contract to Boeing in March 2011 for low-rate initial production of 700 laser sensor kits for the DAMTC program. A full-rate production contract for Laser JDAM sensors is expected in 2012.

Laser JDAM has been used widely in combat by the U.S. Navy and Air Force. It has been incredibly effective in attacking important moving targets accurately and reliably, with minimal collateral damage. Adding the laser sensor to the conventional JDAM kit is an affordable option that's easy for ordnance crews to install and very straightforward for pilots already familiar with JDAM.

International Interest

Boeing has signed Foreign Military Sales (FMS) contracts with the U.S. government to provide Laser Joint Direct Attack Munitions to selected international customers. The FMS contracts were part of a $98 million indefinite delivery, indefinite quantity contract for Laser JDAM production and integration that Boeing received in August 2009. The weapons were delivered in 2010.

There is strong international interest in Laser JDAM because it engages both stationary and moving targets with tremendous precision. There are more than 20 countries that have JDAM, and many of them will adopt Laser JDAM within the next few years.

A recent Block 08 update to the weapon system's software increases Laser JDAM's effectiveness against targets that are turning, accelerating or decelerating. Boeing has completed two successful maneuvering target missions with the Block 08 software, which were fielded in 2010. In February 2009, Laser JDAM engaged and destroyed a target traveling at an initial speed of 55 miles per hour that quickly decelerated shortly before weapon impact. The second test took place in August 2009 against a target traveling at an initial speed of 50 miles per hour that made a sharp turn shortly before weapon impact.

This enhanced capability makes Laser JDAM an even greater asset for customers. If the target can be laser-tracked, Laser JDAM will hit it •

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Boeing
Wikipedia
US Navy

Airborne Lab: Flying High

AML has grown in functionality, with new capabilities

Security concerns across the global landscape reinforce the need for accurate and continuous awareness of one's environment. Different environments, however, require different intelligence solutions. Recognizing the need for a cost effective method to test and field intelligence capabilities, Lockheed Martin developed the Airborne Multi-INT Laboratory – the AML.

with the DRAGON

An innovative flying laboratory, the AML is a Gulfstream III business jet that Lockheed Martin modified into an intelligence test bed. Equipped with reconfigurable array sensors, tactical data links, and an open architecture, the AML offers a "plug and play" platform that allows a variety of intelligence, surveillance and reconnaissance (ISR) sensors to be rapidly integrated into the aircraft's mission systems.

"There is really nothing else like the AML out there," said Jim Quinn, vice president of C4ISR Systems with Lockheed Martin IS&GS-Defence. "Some airborne test beds exist that are used for similar purposes, but they don't have the aggregate capabilities of the AML, and that's what makes it unique."

Since its introduction in 2009, Lockheed Martin has used the AML to evaluate how different sensors operate - alone and in combination - in real-world exercises and scenarios. By investing in the AML, Lockheed Martin has taken on some of its customers' risk mitigation burden for development of intelligence systems and operational concepts. Customer interest has ranged from multiple intelligence experiments to individual sensor evaluation. The AML has also participated in government and coalition demonstrations and experiments in Europe, the Pacific Rim and the United States.

Open Architecture Facilitates

The AML has a full suite of intelligence computing capabilities that supports most commercial operating systems. A canoe-type attachment on the belly of the aircraft contains the AML's electronic intelligence arrays and a high-resolution synthetic aperture radar (SAR) imagery capability. A forward-looking infrared radar (FLIR) ball is mounted toward the rear of the aircraft, and antennas for the aircraft's electronic intelligence system are installed between the SAR and the FLIR. Additional antennas for further communications capabilities are arrayed at various locations on the aircraft.

"We've tested sensors, communications packages, exploitation sub-systems, and even developed concepts of operation for customers," said Quinn. "The AML also helps us identify and resolve integration issues early, which ultimately means reduced non-recurring engineering costs for our customers."

While the hardware is impressive, so is the software architecture. The AML draws upon Lockheed Martin's extensive expertise in service-oriented architectures to provide a computing environment that can accommodate virtually any operating system. Available Computing capacity is another plus, with only about half of the capacity currently being used. The AML mission system is designed with 25 percent growth potential for extra payloads.

The AML's open architecture and configurable exterior physical structure allow sensor components (software and hardware) to be integrated and switched in a matter of hours, rather than days. The open architecture design also makes it simple to integrate the AML with existing sovereign ground architectures while maintaining interoperability during coalition engagements. The architecture supports integration of existing customer capabilities which translates to leveraging existing investment and a reduction of operator training costs for new systems.

The AML provides the hardware and software infrastructure in an airborne platform that allows customers to plug and play multiple intelligence systems in order to determine which sensor combination meets their particular mission needs.

Industry Participation

In just a few years the AML has grown in functionality, with new capabilities being added from a variety of industry partners.

New sensors provided by Rockwell Collins and DRS Defense Solutions have been integrated into the AML's mission system. The AML also provides high definition electro-optical/Infrared sensors from FLIR Systems and wideband data links provided by L-3 Communication Systems-West.

Lockheed Martin continues to work with industry partners interested in fielding their systems on the AML to improve operational functionality.

"The AML has proved itself to be an ideal test platform for testing and fielding intelligence capabilities," said Quinn. "The AML roadmap is still evolving. And that roadmap depends quite a bit on what our customers want to investigate and when."

AML Evolves to DRAGON Series

As valuable as the AML is in conducting intelligence systems experiments, the aircraft also served as a model to determine how to best meet the ISR needs for a multitude of customers and missions. Recognizing that aircraft costs and changing mission requirements

AML interior

The AML has participated in government and coalition demonstrations & experiments in Europe, the Pacific Rim and the US.

challenge the ability for a single platform to meet all intelligence needs, the AML's capabilities and design concepts are leveraged to develop the Dragon series, six innovative, cost-efficient airborne and ground system configurations that help meet a diverse range of ISR needs.

"The Dragon family brand was introduced to characterize the wide range of configurations that Lockheed Martin offers", said Charles Gulledge, director of airborne reconnaissance business development with Lockheed Martin.

DRAGON capability offers a unique approach to match mission requirements and budget to sensor, communications, and airframe options. Cost and capability varies and depends on the customer missions and requirements. The Dragon ISR options - Dragon ScoutTM, Dragon ShieldTM, Dragon StarTM, Dragon StareTM, and Dragon DenTM - all include sensor and communications systems. Ground stations can also be tailored to meet mission needs within available budget.

Dragon Star

The AML falls within the Dragon Star category, which addresses requirements for mid range, multi-intelligence platforms such as the Gulfstream III, Havilland D-8 or Beech Craft B 350. Depending on the mission, these aircraft can be equipped with a variety of sensor combinations, multiple communications systems. Dragon Star type configurations are currently in use with the U.S. Army and the Royal Korean Air Force.

Dragon Shield

Dragon Shield sensor systems are built into trailer-like containers integrated onto standard cargo pallets that can be rolled on and off aircraft. The Dragon Shield configuration is a cost efficient option for customers who need an aircraft that can perform multiple missions, such as airlift and ISR. The team leveraged expertise configuring C-130 and CASA-295 aircraft into dual-role ISR aircraft, which is with the U.S. and Finnish Air Forces.

Dragon flight Fleet

Dragon Stare

The Dragon Stare configuration is focused on providing sensor systems, integrated into the aircraft or into a pod attachable to the exterior structure, for manned and unmanned aircraft. Sensor configurations are based on user needs, and as other systems are include net-centric capable for coalition interoperability.

Dragon Den

For customers who already own aircraft for ISR missions, Dragon Den ground processing stations offers a way to process and exploit collected intelligence faster and with greater accuracy. Available in sizes from a transit case to a complete ground station, Dragon Den ground systems can also be fully integrated with customer aircraft. Dragon Den builds upon Lockheed Martin's decades of expertise processing and distributing ISR for the U.S. Air Force and other customers.

Dragon Scout

For those who need a high altitude system with a complete suite of ISR sensors and communications, there is Dragon Scout. Fashioned for larger, longer range aircraft platforms, Dragon Scout provides a complete multi-Intelligence configured platform that can cover large areas of interest and be completely interoperable with national, joint and coalition forces.

Net Dragon

Finally, perhaps customers need ISR - aircraft or ground stations - for only a short period of time. With a focus on affordable, agile, airborne ISR, Lockheed Martin offers any Dragon option as a contracted service under the Net Dragon configurations.

The NetDragon concept allows a customer to benefit from advanced ISR products without the delay and cost of a new system procurement.

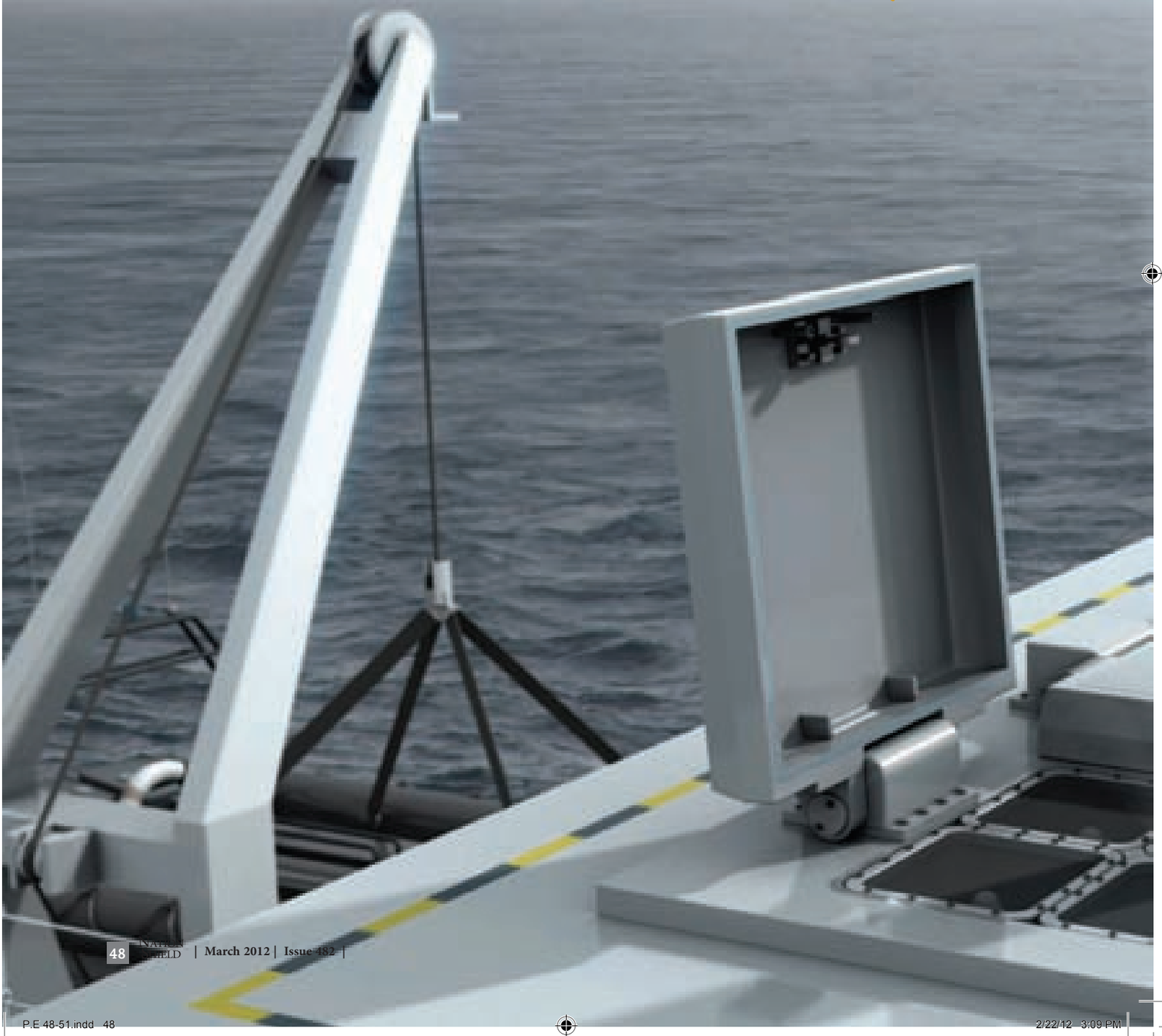
Net Dragon offers the ability to bring surveillance capabilities to any region immediately. Lockheed Martin also offers a transition from a service that is completely contractor owned and operated to a standard procurement when the customers are ready to assume operations.

"Depending on the aircraft and the modifications selected, Dragon Family of system can be provided in as little as three months," said Gulledge. "The Dragon family allows us to provide customers the capability they need, in the airframe they select, when they need it" •

Reference / Photo credit:
Lockheed Martin

SEA CEPTOR Prepares For Global

The Next Generation Air Defence System



Success

SEA CEPTOR is the second major package of work launched under the Portfolio Management Agreement (PMA) signed between MBDA and the UK MoD. Under this Agreement, MBDA has responsibility to lead the transformation of the UK's Complex Weapons (CW) capability through the management of a portfolio of projects potentially worth up to £4 billion over 10 years.


SEA CEPTOR - CAMM main motor fires

Under the contract, MBDA will develop the naval air defence system, named SEA CEPTOR, to replace the Vertical Launch Seawolf currently in service on the Royal Navy's Type 23 frigates. Significantly, SEA CEPTOR is also planned to be the principal air defence system on the successor Type 26 Global Combat Ship.

A boost to UK's Missile Industry

SEA CEPTOR employs the core principles of the PMA and is a major contributor to the financial benefits of the portfolio approach, delivering some £1billion of efficiencies for the UK MoD.

The development of this missile system will be a huge boost to the UK's world-leading missile industry and once again proves commitment to providing battle winning technology to the Armed Forces. The introduction of this cutting edge missile system will not only ensure that the Royal Navy will be able to continue protecting their interests wherever they may be, but is also highly significant in sustaining and developing the UK's skill in building complex weapons.

Welcoming the announcement, Executive Group Director Technical and UK Managing Director Steve Wadey said: "This contract is important for a number of reasons. In the first instance it ensures that with SEA CEPTOR the Royal Navy will have the best equipment to protect its ships and crew against growing threats. The contract is also a powerful example of how industry and the MoD can deliver together an advanced capability that meets military needs in the most cost-effective manner. It is also a highly significant step in advancing and sustaining the UK's mastery of complex weapons technology. Importantly, SEA CEPTOR, ideally suited to the Type 26 Global Combat Ship as well as a wide range of other vessels, is highly relevant to a number of navies around the world who are looking for a next generation naval air defence system capable of countering the growing future anti-ship threat".

Integration Philosophy

SEA CEPTOR will protect both the host ship and high value units in the local area with its capability to intercept and thereby neutralise the full range of current and future threats including combat aircraft and the new generation of supersonic anti-ship missiles. Capable of multiple channels of fire, the system will also counter saturating attacks. Significantly, with SEA CEPTOR, this enhanced level of naval air defence will be provided at lower in-service costs for the remaining life of the Type 23s. It will enter service in the middle of the current decade after which it is planned that it will equip the Royal Navy's Type 26 Global Combat Ship as that replaces the Type 23 after 2020.

A key design driver behind SEA CEPTOR's concept lies in its simple integration philosophy. The system has been designed with the Global Combat Ship specifically in mind. However, SEA CEPTOR can be easily retrofitted into a wide range of platforms, ranging from 50m OPVs to large surface vessels. The fact that the system will so easily replace the Type 23's existing air defence weapon is evidence of its modular flexibility. Two main features provide this flexibility. SEA CEPTOR is a "soft-launch" weapon which allows for a very compact launch system that can be easily positioned in a number of below and above deck locations. More

SEA CEPTOR - CAMM in flight

significantly, as a highly accurate and responsive system with missiles featuring precision guidance, SEA CEPTOR interfaces with the ship's existing surveillance radar and therefore does not require the dedicated fire control radars on which semi-active systems depend.

There is a high degree of commonality between SEA CEPTOR and the CEPTOR-based system for the land environment, a feature that contributes significantly to modularity and re-use initiatives in other PMA projects.

Cost Benefits

FLAADS (Future Local Area Air Defence System) is the name of the far-reaching MoD programme aimed at delivering a new air defence system not only for the Royal Navy but also for the British Army to replace its Rapier deployable air defence system. At the heart of both systems (SEA CEPTOR for the Royal Navy and the future CEPTOR-based land system for the British Army) is MBDA's Common Anti-air Modular Missile (CAMM).The cost benefits of a common weapon system across multiple platforms are manifold. Ease and versatility of platform integration, coupled with low cost of ownership, are intrinsic to the FLAADS-M system design. Most notably, there is no need for complex – and expensive to maintain – platform mounted trackers. As such the system is an excellent proposition for a variety of naval platforms and a high degree of interest is already being shown. Economies will be evident in terms of logistics and support costs. Substantial savings in development costs can also be made when shared across several capability areas. An open architecture will also facilitate incremental upgrades to remove potential future obsolescence in capability, functionality and technology thereby enabling an extended life •

SEA CEPTOR and CEPTOR based system for land have high degree of Commonality

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