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ISSN 2230-9845

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Vol: 2 Issue 22 ▪ November 16-30 ▪ 2012

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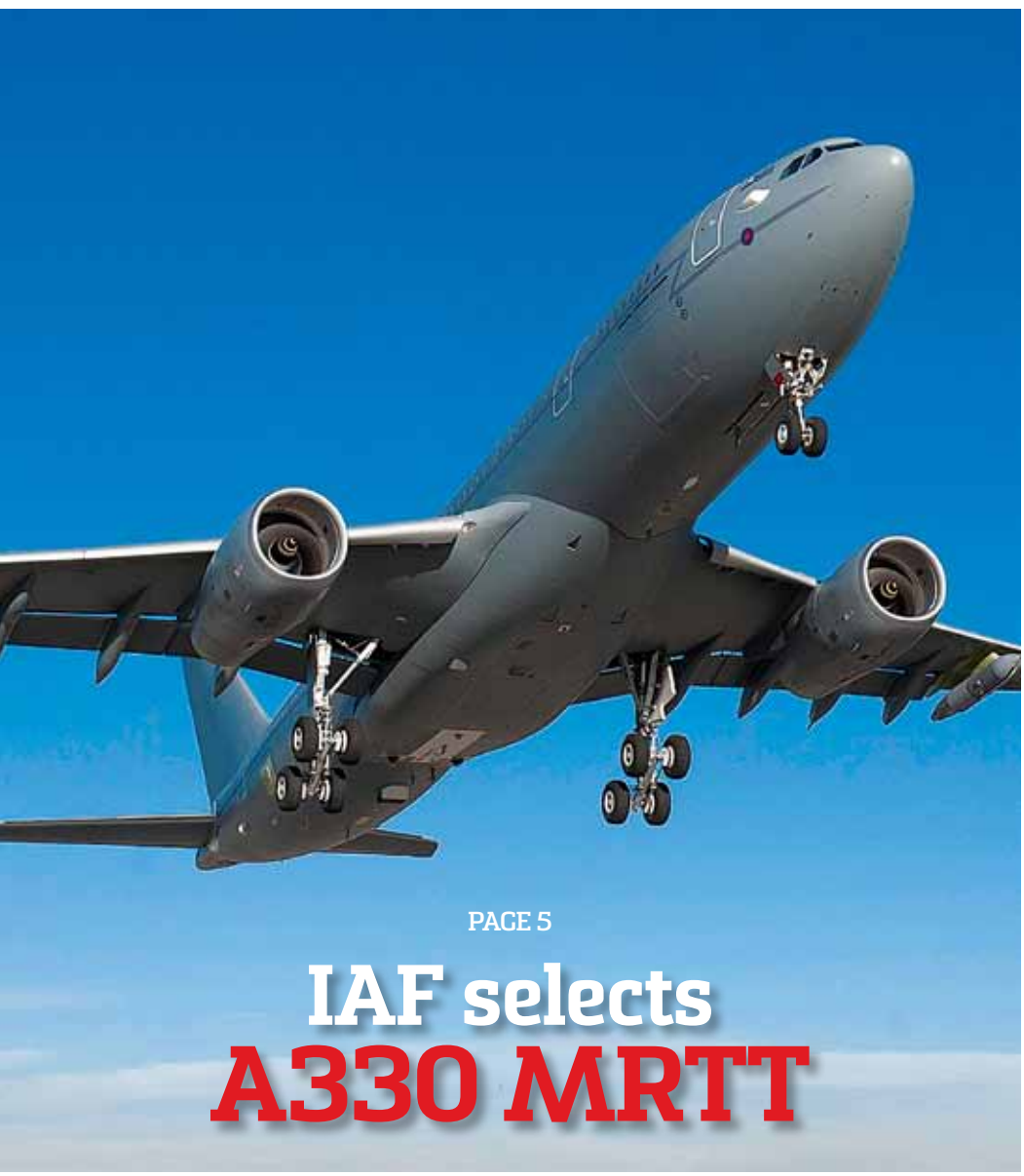

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Indigenous solutions to tactical communication challenges needed: Antony

The Minister for Defence A.K. Antony has said modern-day communication tools have reduced the gap between strategic, operational and tactical domains. Inaugurating the two-day International Seminar and Exposition Defcom India 2012 in New Delhi, he said the single biggest challenge facing societies is the vulnerability of communication and network devices to attacks, or threats in the electronic, cyber as well as the physical domain.

Over the last few years, some progress has been made in developing a tactical communication system (TCS). It is an ideal opportunity for the Indian industry

PHOTOGRAPH: PIB

and R&D organisations to come forward and provide latest solutions to the challenges being faced in TCS.

Chief of Army Staff General Bikram Singh, said that the TCS network has to be dynamic and resilient with multiple redundancies. While the transition to the TCS environment will be gradual, it is important that the soldier in the battlespace does not have to deal with multiple communication devices. Instead, what is required are multiple RF equipped devices. The overall aim should be to develop reliable, mobile, high-speed convergence networks that are inter-operable with even legacy systems and function in a joint services environment.

Lt General S.P. Kochchar, Signal Officer in Chief, said that the challenge of developing TCS lies in communication reaching the war-fighter. He said that the Corp of Signals is the second largest network provider in the country and the third largest telecom service provider. SP

Cover:
The A330 MRTT is the most capable tanker/transporter currently available. It is the only aircraft able to perform simultaneously three different types of missions: aerial refuelling (tanker role), passenger and/or freight transport, and/or medical evacuation (MEDEVAC).

Cover image: Airbus Military

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ANNUAL SUBSCRIPTION
Inland: ₹1,320 • Foreign: US$ 325

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Owned, published and printed by Jayant Baranwal, printed at Kala Jyothi Process Pvt Ltd and published at A-133, Arjun Nagar (Opposite Defence Colony), New Delhi 110 003, India.

Formalise contracts please

Always around the time of down-select and final announcement of a winner in a defence acquisition programme, there is so much excitement within the industry, in the armed forces and the media. After the selection has been made, it seemingly becomes a long-drawn and laborious process before the contracting parties sign on the dotted line.

The case in point is the multi-billion dollar medium multi-role combat aircraft (MMRCA) which Dassault's Rafale bagged almost a year ago. The contract is yet to be signed and there is no inkling, whatsoever, the course it is taking. Now, there is another big-ticket announcement. The IAF has approved the tender for six new generation flight refuelling aircraft worth 1.35 billion dollars. Airbus Military A330 MRTT has edged past Russian IL 78 in the final selection, but till the deal is signed all of them are on tenterhooks.

Agreed, the government wants to be cautious when signing deals, in the backdrop of various scams. It still can be cautious, but it needs to step up its pace when it comes to decision-making, particularly keeping in mind the urgent modernisation requirements of the armed forces.

We are known for protracted decisions. For almost over a year there has been this talk of divesting aerospace behemoth Hindustan Aeronautics Limited (HAL). It is only now that the Cabinet Committee on Economic Affairs (CCEA) has given its nod to a proposal for disinvestment of 10 per cent of the Centre's equity in HAL. The equity would be in the form of initial public offer (IPO) in the domestic market and it is a welcome move. However, as to when the IPO would be out is anybody's guess.

The IPO would infuse funds into HAL which is handling key projects for the armed forces, including the development of 'Tejas' light combat aircraft, 'Dhruv' advanced light helicopters and indigenous production of Russian-origin Su-30MKI fighter aircraft. Besides, on the horizon is indigenous production of MMRCA, fifth-generation fighter aircraft (FGFA) and multi-role transport aircraft (MTA). HAL would be requiring about ₹20,000 crore over the next five years as it steps up production plans.

Meanwhile, we have news that HAL has initiated the first metal cut for its own turboprop ab initio trainer aircraft, the HTT-40 that will augment the Pilatus PC-7s and progressively replace the HPT-32 Deepak that remains grounded. HAL has announced that the project would be governed by a strict time frame. Going by HAL's track record of interminable delays in completing various projects, it is hoped that the aerospace major will change gears and get onto the fast track.

Away from business and technology, we have Lt General (Retd) P.C. Katoch talking about policy conundrums in India, in this instance on Special Forces. The General asks as to who is responsible to work out and implement a doctrine and concept of employment for the National Security Guards (NSG). Is it the NSA, the Home Minister or the Home Secretary? Such issues are going to crop up more often as India as a nation is coming to grips with security challenges.

Jayant Baranwal
Publisher and Editor-in-Chief

Airbus Military wins Indian mid-air refueller tender

PHOTOGRAPH: Airbus Military

In yet another loss to Moscow in a big-ticket Indian military tender, EADS/Airbus Military has emerged as the winner in the Indian Air Force's (IAF) tender for six new generation flight refuelling aircraft (RFA). The victory may be especially sweet to Airbus considering that an earlier victory saw the tender being cancelled in January 2010 as a result of high acquisition cost of the A330 MRTT, with a prospective contract being shot down at the eleventh hour by the Ministry of Finance. This time, however, with a renewed focus on life cycle and ownership cost, Airbus Military has been able to stress on the advantages of its package a whole lot better. In fact, sources say its rival in the competition, the Ilyushin-78M had a lower unit cost per aircraft—it is significantly smaller—but the overall commercial package offered by EADS/Airbus was more competitive, and therefore the selection.

It may be remembered that the IAF had stuck its neck out to push through a deal with EADS the last time too, but in the absence of a life cycle cost template to analyse total costs, the Finance Ministry put its foot down. EADS will be cautious about being declared the winner in the overall competition, though contract negotiations will still need to go through before a contract can be signed. The win is also important for EADS, which has suffered a string of setbacks in India over the last five years—the abortion of the 197 reconnaissance and surveillance helicopter (RSH) and flight refuelling aircraft tenders when EADS products had emerged winners—and the defeat of the Eurofighter in the medium multi-role combat aircraft (MMRCA) fighter tender to rival Dassault earlier this year.

The A330 MRTT was put through trials in November last year in India, where it demonstrated in-flight refuelling of IAF Su-30MKI and Jaguar jets. According to Airbus Military, "The A330 MRTT is the most capable tanker/transporter currently available. It is the only aircraft able to perform simultaneously three different types of missions: aerial refuelling (tanker role), passenger and/or freight transport, and/or medical evacuation (MEDEVAC). Also, its tank capacity is sufficient to supply the required fuel quantities without the need for any additional reservoirs, nor major structural modifications and it is able to carry more passengers and more freight than any of its competitors."

The deal is close to $1.35 billion. SP

Navy looking for torpedo simulator

The Indian Navy is looking to acquire a torpedo simulator for the Atlas Elektronik SUT 266 currently deployed on its HDW class 209/Shishumar class attack submarines. According to the Navy's request for information from Indian and global vendors, "The units including interfaces must conform in function to enable series inspection of torpedo tubes onboard submarines with fire control system CCS-90-1/ISUS-90 (SFCS). A detailed response is essential so as to analyse the proposed solution of the vendor with regards to technical capabilities and features of the torpedo simulator. The torpedo SUT 266 and fire control system CCS-90-1/ISUS-90 SFCS installed on board submarines are manufactured by Atlas Eleckronik, Germany, hence, firm responding to the proposal should be capable of obtaining the relevant interface data independently from the OEM of SFCS and SUT 266." SP

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PHOTOGRAPHS: US Navy, HAL

LUH bottom structure assembly completed

After months of displaying a mock-up at air shows and events, the bottom structure assembly of HAL's light utility helicopter (LUH) ground test vehicle is complete and has been taken down from the jig last month. According to HAL, "LUH assembly jigs are modular and gaugeless jigs, concurrently designed along with structure design using 3D CAD. There are five assembly jigs and a coupling jig enabling modular and concurrent build-up of the structure. The jigs are built and validated using state-of-the-art CAMS (Computer Aided Measurement System) laser tracker to establish high accuracy and stability. The latest concept of jig design and build has resulted in smooth and flawless 'First off' structure build." HAL is currently deciding on an engine for the LUH between the Turbomeca Ardiden 1H1/Shakti and the LHTEC T-800.

The LUH will look to service a requirement of 184 helicopters for the three services to augment the 197 being procured through a global tender, currently perched precariously on its final leg. The 197 copter bid, being contended by Eurocopter's AS550 C3 Fennec and the Russian Ka-226T Sergei is expected to see a decision soon. SP

HAL conducts first metal cut on new turbo trainer

While Swiss firm Pilatus Aircraft begins confirmatory flight checks on India's first PC-7 Mk.II propeller trainers in Switzerland, HAL has launched the first metal cut for its own turboprop ab initio trainer aircraft, the HTT-40, that will augment the PC-7s and progressively replace the HPT-32 Deepak, that remains grounded. According to HAL, "The programme is governed by a strict time frame and ARDC is all geared up to meet the challenge. Key achievements include completion of preliminary design phase (PDP), finalisation of numerical master geometry (NMG),completion of preliminary wind tunnel testing, design of major frames and system finalisation."

HAL is still to finalise an engine for its platform. The first flight of the HTT-40 is likely to take place by early 2014. With Tejas running into interminable delays and HAL's intermediate jet trainer (IJT) HJT-36 Sitara also in trouble, there will be a glaring focus on whether HAL manages to stick to timelines on even a basic aircraft like the HTT-40. The company's reputation may be on the line to deliver a simple propeller trainer on or before time, considering that it has already taken on board infinitely more complex projects, including the fifth generation fighter aircraft, which will require actual input from the company's designers and engineers. SP

Raytheon's ground-based anti-tank guided missiles

TOW is in service in more than 40 international armed forces and integrated on more than 15,000 ground, vehicle and helicopter platforms worldwide

[By **Lt General (Retd) Naresh Chand**]

Vehicle launched anti-tank guided missile: TOW

The tube-launched, optically-tracked, wireless-guided (TOW) weapon system, with the multi-mission TOW-2A, TOW-2B, TOW-2B Aero and TOW Bunker Buster missiles, is a long-range, precision anti-armor, anti-fortification and anti-amphibious landing weapon system used widely in more than 40 international armed forces and integrated on more than 15,000 ground, vehicle and helicopter platforms worldwide. The present system has been evolved from TOW missile which is wire-guided and has been in service since 1970 with many versions like TOW-2A, TOW-2B,TOW-2B Aero; and TOW Bunker Buster. TOW's superior stand-off range and minimal firing signature maximise gunner survivability. The missiles can be fired from the ground using a tripod-mounted launch tube or installed on vehicles like M2/M3 Bradley, LAV-AT, M1134 Stryker etc.

TOW 2B Aero Missile

An extended range TOW-2B variant was developed which was initially referred to as TOW-2B (ER), but is now called TOW-2B Aero which has a special nose cap that increases range to 4,500 metres. A wireless version of the TOW-2B Aero has also been developed that uses stealth one way radio link, called TOW-2B Aero RF.

RF Version

RF links replace the legacy wire-guided system with it becoming a command data link missile with the following improvements:

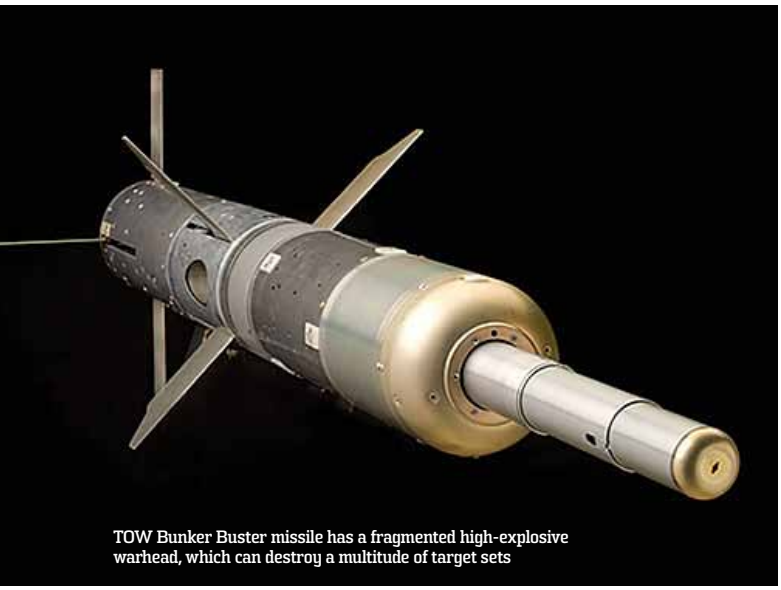
- Greater reliability
- Enhanced overwater performance
- No power line restriction
- Enhanced combined arms applications in urban environments
- Performance to longer range
- Greater environmental compliance under training conditions
- Enhanced combined arms applications in urban environments

A RF transmitter is fitted into the missile case and a RF receiver is integrated into the missile electronics. It is effective range is approximately 3.75 km. It is light, versatile, affordable and effective in difficult environments.

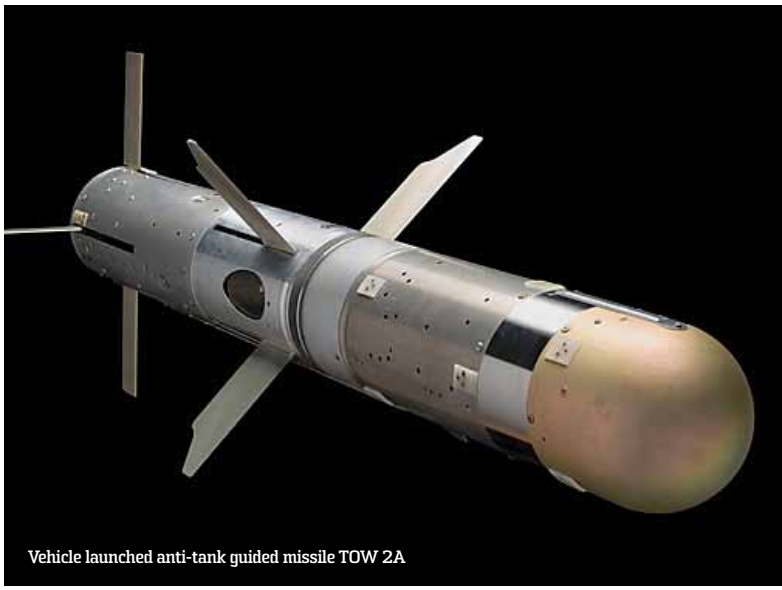
TOW Bunker Buster Missile

The TOW Bunker Buster missile is a recent development in which its fragmented, high-explosive warhead can breach or destroy a multitude of target sets, especially in the urban environment. The

PHOTOGRAPHS: Raytheon



TOW Bunker Buster missile has a fragmented high-explosive warhead, which can destroy a multitude of target sets



Vehicle launched anti-tank guided missile TOW 2A

warhead's configuration enables it to breach 8 in (20.3 cm) thick, double-reinforced concrete walls and provides overmatch against earth and timber bunkers. Whereas traditional shaped-charge warheads can penetrate entire buildings, the TOW Bunker Buster disperses its pressure at the point of penetration. This enables greater precision in urban engagements, enhances lethality and minimizes collateral damage outside of the target area. No gunner training or platform modifications are required to employ the TOW Bunker Buster from existing launchers. TOW Bunker Buster missile is employed with the US Army's most modern force i.e. the Stryker Brigades.

Future Development

Raytheon and ATK's Missile Products Group are working closely to develop a propulsion system that improves the performance of the TOW missile. The launch, boost, sustain (LBS) propulsion system also incorporates a rocket motor designed with Insensitive Munitions features to provide added safety. Raytheon states that the aim of LBS technology is to enhance the gunner's survivability by allowing him to engage targets outside the threat range of direct engagement systems and by reducing the time it takes to track a target.

Combat Record

About 30,000 TOW missiles have been fired in combat out of which more than 11,000 have been fired in Iraq and Afghanistan. Due to TOW's proven combat record and 90 per cent operational availability, 6,58,000 missiles have been delivered to 43 countries so far. It will remain on the inventory of the US Army through 2035.

Vehicle Launched ATGM: Javelin

Javelin is a man-portable anti-tank weapon which is a joint venture of Raytheon and Lockheed Martin. Javelin is shoulder-fired and can also be installed on multiple surface platforms like tracked, wheeled or amphibious vehicles. Its development started in 1989 for replacing US Army's M47Dragon anti-tank missile and came into service in 1996.

The Javelin system consists of the command launch unit (CLU) and the missile in a launch tube. The CLU consists of a passive target acquisition and fire control unit which has a day sight and a thermal imaging sight. All the controls for the gunner are on the CLU. The missile is fire-and-forget with lock-on before launch. The range is 2,500 metres. The tandem warhead includes two shaped charges for superior armour penetration. There have been many improvements since it came into service to improve its lethality and accuracy. The system is deployed and ready to fire in less than 30 seconds and the reload time is less than 20 seconds. The missile is mounted on the CLU and the gunner engages the target using the sight on the CLU. The gunner locks on the automatic target tracker in the missile by sending a lock-on-before-launch command to the missile. When the system is locked-on, the missile is launched. As it is a fire and forget system no further action is required by the gunner. It has low recoil due to the soft launch thus making easier to be shoulder-launched. It also emits less smoke during firing thus difficult to detect from a distance. It can be fired in two modes: direct attack mode to engage covered targets, bunkers, buildings and helicopters and top attack mode against tanks. The standalone mode usage of CLU in stand alone mode has proved effective in target detection and battle field reconnaissance in Iraq and Afghanistan. The future plans for Javelin is to develop a fragmentation warhead for anti-personnel effect and a multipurpose warhead.

Combat Record

Javelin is in service with many countries apart from the US and more than 3,000 missiles have been fired in Iraq and Afghanistan where it has been effective against caves. It will remain in the US Army inventory through 2050.

Indian Perspective

The Indian Army has selected Javelin as the trials on Israeli's Spike were not successful. It is also learnt that the Indian soldiers adapted to the system rapidly and carried out effective firing during joint exercises in the US. It was reported that the US had not agreed to the sale of the quantities asked by India. This issue was raised with the US Defense Secretary Leon Panetta during his visit to India in June this year. He responded by stating that the US is "committed" to providing the weapon to India. He added that "We have not cut the quantity... I want to reassure that we are committed to the sale of Javelin to India and are working closely not only for that but other (military) sales that will help in increasing (Indian) capability," he said. They are prepared to compete for any ATGM programme including NCNC trials and transfer of technology. SP

New Chief of Integrated Defence Staff takes over

Lt General Naresh Chandra Marwah has taken over as the Chief of Integrated Defence Staff to the Chairman Chiefs of Staff Committee (CISC) from Vice Admiral S.P.S. Cheema. The General Officer in his career spanning over 39 years has held various coveted command, staff and instructional appointments. The General Officer has a vast operational experience, stretching to almost two decades across the entire spectrum of conflict.

The General Officer has commanded an Infantry Battalion at Siachen Glacier, an Assam Rifles Sector and a Mountain Division in the Eastern Theatre and operationally challenging Corps based at Srinagar (J&K). He has served in General Staff appointments at the Brigade and Division besides two tenures, extending over four years, as Deputy and Additional Director General in Military Operations at Army Headquarters. The officer has been Directing Staff at all the inter-services establishments namely the National Defence Academy, Kadakwasla; Defence Services Staff College, Wellington and the College of Defence Management, Secunderabad.

Prior to moving to Delhi the General Officer has been commander-in-chief of the unique and prestigious Tri-Services Andaman & Nicobar Command (CINCAN) since January 1, 2011. As CINCAN with his strategic vision, foresight, rich and varied experience of serving in inter-services institutions and organisations, the General Officer has contributed towards building and improving diplomatic and military ties with littorals and friendly foreign countries.

The General Officer was conferred distinguished service award of Ati Vishisht Seva Medal in 2008 and Param Vishisht Seva Medal in 2012 for his invaluable contribution during his tenure as commander-in-chief Andaman and Nicobar Command. The General is also the colonel of the Kumaon and the Naga Regiment and Kumaon Scouts. SP

General Dynamics to upgrade Canadian LAV III vehicles

The Canadian Minister of Public Works and Government Services, Rona Ambrose, has stated that the Government of Canada has awarded a contract modification valued at $133.5 million to General Dynamics Land Systems-Canada to upgrade an additional 66 LAV III vehicles. This award modifies a contract previously announced in October 2011 to upgrade 550 LAV III vehicles, valued at $1 billion.

The LAV III upgrade project will now modernise 616 vehicles, significantly enhancing their survivability, mobility and firepower and extending the fleet's lifecycle to 2035. Survivability upgrades will include the introduction of double-V-hull technology, an innovative enhancement developed by General Dynamics Land Systems-Canada engineers, as well as add-on armour protection and energy-attenuating seats. These improvements will provide crew members greater protection against mine blasts, IEDs and other threats.

The LAV III's automotive performance, handling characteristics and payload capacity will be optimised with mobility system upgrades including a more powerful engine, more robust driveline and suspension, and a height management system (HMS). The 25mm turret's crew ergonomics will be improved by incorporating larger hatches, and its capabilities will be enhanced by the addition of the latest technologies, including improved fire control, thermal, day and low-light sights and data displays.

"Helping to protect the men and women of the Canadian forces is a privileged role, and we understand our responsibility and what is at stake," said Danny Deep, Vice President of General Dynamics Land Systems-Canada. "The upgraded LAV III will provide our Canadian soldiers with one of the most advanced and modern vehicles of this type in the world. It will also provide much-needed job stability throughout Canada's high-value defence sector." SP

Huntington launches Virginia class submarine Minnesota

Virginia class submarine Minnesota was launched into the James River on November 3 at the company's Newport News Shipbuilding (NNS) division.

"Launch is a significant accomplishment in the life of a submarine," said Jim Hughes, NNS' Vice President of submarines and fleet support. "It's an opportunity for our incredible shipbuilders to stand back and take pride in their work. Thanks to their tremendous efforts and steadfast determination, Minnesota's progress is nearly one year ahead of schedule and has been built using about 6,00,000 fewer man-hours than the previous boat."

To achieve it's latest milestone, the 7,800-tonne Minnesota was moved out of a construction facility into a floating dry dock using a transfer car system. The floating dry dock was submerged, and Minnesota was launched into the James River. Once in the water, tugboats moved the submarine to NNS' submarine pier, where final outfitting and testing will take place. SP

PHOTOGRAPHS: PIB, Huntington, General Dynamics

Qatar to buy Patriot missiles in $10 billion deal

The Defense Security Cooperation Agency has notified the US Congress of a possible foreign military sale (FMS) to the Government of Qatar for the sale of 11 Patriot configuration-3 modernised fire units and associated equipment, parts, training and logistical support for an estimated cost of $9.9 billion.

The Government of Qatar has requested a possible sale of 11 Patriot configuration-3 modernised fire units; 11 AN/MPQ-65 radar sets; 11 AN/MSQ-132 engagement control systems; 30 antenna mast groups, 44 M902 launching stations, 246 Patriot MIM-104E guidance enhanced missile-TBM (GEM-T) with canisters, 2 Patriot MIM-104E GEM-T test missiles, 768 Patriot advanced capability 3 (PAC-3) missiles with canisters, 10 PAC-3 test missiles with canisters, 11 electrical power plants (EPPII), 8 multifunctional information distribution systems/low-volume terminals (MIDS/LVTs), communications equipment, tools and test equipment, support equipment, publications and technical documentation, personnel training and training equipment, spare and repair parts, facility design, US Government and contractor technical, engineering, and logistics support services, and other related elements of logistics and programme support.

The estimated cost is $9.9 billion. Qatar will use the Patriot Missile System to improve its missile defence capability, strengthen its homeland defence, and deter regional threats. The proposed sale will enhance Qatar's interoperability with the US and its allies, making it a more valuable partner in an increasingly important area of the world. Qatar should have no difficulty absorbing this system into its armed forces.

The prime contractors will be Raytheon Corporation in Andover, Maryland, and Lockheed-Martin in Dallas, Texas. SP

Nexter's Caesar self-propelled gun for Indonesia

Nexter Systems has a long history as a partner of the Indonesian Armed Forces, and is particularly proud to have participated in modernisation of Tentara Nasional Indonesia (TNI) in preparation for the upcoming commissioning of two artillery regiments based on the Caesar system, with local cooperation.

The Caesar is a uniquely innovative technical solution combining tactical mobility and firepower. Its 155mm/52 calibre artillery offers precise longer range fire support and its wheeled chassis makes air transport possible, particularly in a C-130, while limiting its cost of ownership.

The Caesar system is now in service in three countries. It is used by the French army in Afghanistan to provide fire support, and it has demonstrated its operational capabilities and is now combat proven. France has used it within the United Nations in Lebanon, and it is also in service in a Middle East country and forms part of the Royal Thai Army's artillery. SP

INS Tarkash commissioned

INS Tarkash, the second of the three stealth frigates constructed at Yantar Shipyard, Kaliningrad Russia, is being commissioned and inducted into the Indian Navy by Vice Admiral Shekhar Kumar Sinha, Flag Officer Commanding-in-Chief, Western Naval Command on November 9, 2012 at Kaliningrad, Russia. Ambassador of India to the Russian Federation Ajai Malhotra is attending this importanat event. Senior officials of the Russian Government, Indian and Russian Navies, Federal Service for Military Technical Cooperation, Rosoboronexport, United Shipbuilding Corporation, Yantar Shipyard and Russian industry representatives too witness the commissioning ceremony.

The induction of the second in the series of the multi-role stealth frigate with an advanced combat suite and an optimal blend of Russian and Indian cutting edge technologies, not only bolsters the Indian Navy's role as a key facilitator in promoting peace and stability in the Indian Ocean region but also embodies the dynamic character of Indo-Russian military technical cooperation.

The formidable array of weapons and sensors onboard the ship include the supersonic BrahMos missile system, advanced surface-to-air-missile system, upgraded 100mm medium range gun, optically controlled 30mm close-in weapon system, torpedoes, rocket launchers and advanced electronic warfare/communication suite.

The ship is commanded by Captain Antony George, an anti-submarine warfare specialist. The ship will join the Western Fleet of the Indian Navy by December end this year. SP

PHOTOGRAPHS: Raytheon, Nexter, Indian Navy

Emerging technologies and their impact on war-fighting

[By **Colonel Ranjit Sundaram**]

A two-day national-level seminar on "Emerging Technologies and their Impact on Warfighting: 2030s" was organised at the Military College of Telecommunication Engineering in Mhow recently under the aegis of Army Training Command (ARTRAC).

The objective of the seminar was to delve into some pivotal emerging and foreseen technologies that will fundamentally alter war-fighting doctrines, tactics and force structures. The scope

Lt General Rajesh Pant, VSM, Commandant MCTE, delivering the opening address

PHOTOGRAPH: MCTE

was obviously vast and speculative. The seminar, due to its finite time-focused on those realms which had a higher probability of manifestation as well as potential to force the future generation to fight differently.

The seminar was aimed to help the armed forces to refine their long-term vision and devote greater time, finances and training effort towards trying to build such fighting capabilities and countermeasures which would keep the forces "future ready" at all times.

The seminar focused on impact of changing global structure on war waging capabilities; creating awareness on the changing combat scenarios due to technological advancements; analysing emerging technologies and their implications on the battlefield; identifying policies and implementation issues for absorption/induction of technologies in the armed forces, etc.

The seminar not only helped in getting various domain experts from Army, Navy, Air Force but also from various prestigious civil institutions like NTRO, IITs and other academic institutions and eminent scientists from the Defence Research and Development Organisation (DRDO). Dr S.S. Sundaram, a distinguished scientist from DRDO, delivered the special address.

Emerging Military Technologies

Science and technology have been closely associated with warfare and the relationship is getting more pronounced with each passing year. The emerging military technologies have been adding new dimensions to the battlespace, enlarging the spectrum of conflict and dramatically raising the quantum and intensity of violence.

The appearance of a new kind of weapon or concept once in a while has triggered a drastic transformation in warfare resulting in a revolution in military affairs (RMA) though the term has been coined much later in early 1990s. The developments in history have had revolutionary impact on the course of warfare over the last three centuries. The emergence of concept of nation state and creation of large-scale national armies, the industrial revolution that enabled maintenance and movement of such large armies, advent of new technologies during World War I and World War II setting the pace for new forms of warfare have all impacted war-fighting; The invention of nuclear weapons with state-of-the-art delivery means are threatening the very viability of conventional wars today.

The exponential growth in the field of electronics and information technologies is stimulating yet another revolution in current times, ushering an Information Age with advanced technological and intelligence systems, making the battle space more transparent. A large number of technologies are in different stages of evolution which are set to impact warfare in every dimension, viz land, sea, air, space and cyber space. A historical perspective also suggests that any future conflict will be as different from World War II as it was from World War I and all others that preceded it.

The technological developments and RMA have also substantially changed the ways in which future wars will be fought. Hence, the need to analyse the contours of the future battlefield and develop new 'Skill Sets' to cope with the emerging nuances of uncertainty become criticalities for effective warfighting. This may also call for a review of not only existing notions about military leadership, doctrines and concepts, but more importantly, the training to meet future challenges.

It was realised that the advancements in technologies which are taking place in the civil domain are also going to impact the defence forces and defence-related technologies in a major way. This aspect has been a matter of discussion as part of various studies and forums at ARTRAC. To further deliberate on this important issue a necessity was felt to organise a forum of eminent personalities and experts from specialised fields to discuss in detail this subject and take decisions/actions at various levels in order to prepare India as a nation for futuristic conflicts. SP

The writer is serving as Colonel GS (Training), Military College of Telecommunication Engineering, Mhow

Indian airmen receive C-17 maintenance training

The Indian Air Force (IAF) has started sending about 100 airmen to Joint Base Charleston, South Carolina, to receive instruction from the 373rd Training Squadron Detachment 5, on how to operate the C-17 Globemaster IIIs.

"The IAF purchased the C-17s and they need the training because these Indian airmen are going to be the ones standing up the initial C-17 unit (in India) and we were nominated to be the schoolhouse that teaches them," said Tech. Sgt. Paul Higgins, 373rd TRS Detachment 5 electrical environmental instructor.

The 373rd TRS Detachment 5's mission is to provide aircraft maintenance to the Department of Defense and its allies.

"We are learning the basics of the aircraft as well as the technical manual, which is quite helpful in learning the part numbers and other technical aspects of the C-17," said Indian Air Force Junior Warrant Officer Prakash Chand.

"What we're learning here is going to help us to be able to maintain the C-17 aircraft in India," said IAF Junior Warrant Officer Ranbir Singh Rana. "We have very good and experienced instructors and very good communication with them. We are catching on very quickly and when we have questions, they are able to clear up things quickly."

The IAF expects to receive their C-17s in June 2013. India paid $4.1 billion for the aircraft, which is expected to replace their IL-76 fleet. SP

L-3 WESCAM expands MX™-Series eLearning course

L-3 WESCAM recently announced that its eLearning training programme, designed for operators and maintainers of MX™-Series EO/IR imaging turrets, now includes courses on MX-10 and MX-20 turret models.

"We are happy to expand our eLearning curriculum to include courses on our MX-10 and MX-20 imaging products," said Rod Till, Vice President of Customer Service for L-3 WESCAM. "The customer feedback we received on content and pricing from our MX-15 course was exceptional, and in turn has helped us to create these courses, which are completely aligned with customer expectations."

Similar to the MX-15 training course, the MX-10 and MX-20 eLearning courses were designed to teach the detailed operation and maintenance skills required to maximise system performance. The courses cover theory, operations and maintenance topics in an interactive, scenario-based format. Specific system operations and maintenance tasks can be accessed quickly, making each course a powerful reference tool in the field. An investment in L-3 WESCAM's eLearning programmes provides an estimated 70 per cent cost savings over traditional in-class courses.

All of L-3 WESCAM's eLearning courses are geared towards those new to operating and maintaining MX-Series turrets, and for experienced personnel requiring refresher training. Modular in design, each course takes an estimated 12 hours to complete and includes modules with knowledge checks that allow students to apply the newly acquired information.

L-3 WESCAM is a world leader in the design and manufacture of stabilised, multi-spectral imaging systems. SP

Airbus Military and PT Dirgantara Indonesia sign agreement

Airbus Military and PT Dirgantara Indonesia (PT DI) have signed an agreement to jointly launch an upgraded version of the Airbus Military C212-400 as a further step in their long-term cooperation agreement. The aircraft, renamed as NC212, will be offered to both civil and military customers and will be a highly competitive offer in the market segment of light aircraft, being equipped with new digital avionics and autopilot systems. It will also have a new civil interior for up to 28 passengers compared to the current 25, increasing its cost efficiency significantly. The NC212 will be EASA and FAA FAR 25 certified.

The agreement foresees joint development, manufacturing, commercialisation and customer support to cover the needs of the civilian, cargo and military light aircraft market segments for the next decade. The potential market in this segment is estimated at 400-450 aircraft in the next 10 years. A final assembly line is to be set up in the PT DI facilities in Bandung. This is a further step towards increasing the cooperation between the two long-standing partners.

The NC212 is the second immediate result of the "Teaming Agreement" signed between Airbus Military and PT DI, which supports PT DI's revitalisation through specific cooperation and business development projects, and aims to achieve a long-term strategic partnership between Airbus Military and PT DI in the near future. The recent order for nine CN295s from the Indonesian Government and the related C295 cooperation packages between Airbus Military and PT DI were the first immediate results of this plan, including the creation of a CN295 Delivery Centre, a light CN295 Final Assembly Line and the setting up of a Service Centre in Bandung. SP

PHOTOGRAPHS: af.mil, Wikipedia

Northrop Grumman to provide attitude heading reference system for Israel's M-346 aircraft

Northrop Grumman Corporation has been selected by prime contractor Alenia Aermacchi to provide the attitude heading reference system (AHRS) for the Israel Ministry of Defense's M-346 advanced trainer aircraft fleet.

Northrop Grumman Italia will provide the LISA-200 AHRS for the fighter trainer under a new contract that builds on its five-year experience as a supplier for the M-346 programme.

"The LISA-200 is ideally suited to meet the rigorous standards set by the M-346, which is one of the world's most modern and advanced jet trainer systems," said Marco Clochiatti, Managing Director and General Manager of Northrop Grumman Italia. "This award builds on prior collaboration with Alenia Aermacchi through programmes such as the Eurofighter and exemplifies Northrop Grumman's navigation leadership in international markets."

Based on accurate and reliable fibre-optic gyro technology, the LISA-200 AHRS incorporates advanced features such as a high-speed data refresh rate and output to fulfill the stringent requirements of a fly-by-wire quadruple-redundant control system.

Northrop Grumman Italia has delivered more than 4,000 LISA-200 systems worldwide.

The twin-turbofan M-346 is a highly advanced lead-in fighter trainer. It offers fully digital flight controls and avionics, along with high angle-of-attack manoeuvring. SP

Saab receives order for Gripen support and maintenance

PHOTOGRAPHS: Northrop Grumman, Saab

Defence and security company Saab has received an order from the Swedish Defence Materiel Administration (FMV), for the support and maintenance of Gripen and technical support for the Swedish Armed Forces. The order forms part of an earlier signed agreement for performance-based support and maintenance. The order has a total value of SEK 330 million.

The order, for services in 2013, is placed under options included in a previously signed agreement with FMV, for performance-based support and maintenance of Gripen. The agreement was signed in June 2012. The order includes support and maintenance activities, which are essential for the flight and operation of Gripen, and includes technical publications and repairs. In addition, the order comprises logistical services and technical support for air, land, sea and command and control systems.

The work will be undertaken in Sweden at Saab's facilities in Linköping, Arboga, Järfälla, Göteborg, Växjö and Östersund.

The original support and development agreement with FMV included options for further orders to a maximum value of SEK 2 billion until 2016, of which the SEK 330 million forms part. SP

Cassidian and Atech to provide advanced avionics for Brazilian Navy helicopters

Cassidian, the defence and security division of EADS, joins forces with Brazilian systems specialist Atech, São Paulo, to equip the new EC725 helicopters of the Brazilian Navy with an advanced mission management system.

As part of the procurement of 50 EC725 helicopters by the Brazilian armed forces, Eurocopter and its Brazilian subsidiary Helibras signed a contract with Atech and Cassidian to develop and manufacture the tactical data management system (TDMS) for eight navy helicopters. The contract worth over €40m will be concluded by 2017.

The Eurocopter/Helibras consortium's H-XBR programme will equip the Brazilian armed forces as part of the National Defence Strategy, which established the mid- and long-term activities to modernise the defence sector in Brazil, supporting development of infrastructure and resources and the restructuring of the Brazilian defence industry.

"For Atech, to take part in this consortium, working on this Ministry of Defence programme under the coordination of the Brazilian Air Force, is a great honour and also a great responsibility", declares the Atech CEO, Tarcisio Takashi Muta. "Atech is dedicated to the mastering of mission critical technologies. Our presence in this consortium as a supplier of the mission system confirms Atech's experience in technology absorption projects, airborne systems and high performance tactical communications systems. We will participate in the development, production and support phases of the project, enabling Atech to further on maintain these systems. Atech 's involvement in this project at this level is in sync with the National Defence Strategy, which also advocates the country's autonomy in defence technology systems."

"Our companies have an impressive track record in the field of mission management systems", explained Dr Rolf Wirtz, Head of Mission Avionics at Cassidian. "Together, we will provide the Brazilian Navy with an extremely reliable and versatile system to enable the performance of maritime surveillance missions." SP

France begins evaluation of Watchkeeper

The DGA and its British counterpart, DE&S, kicked off France's evaluation of the Watchkeeper tactical UAV. France and the United Kingdom continue to cooperate on tactical UAVs, as provided by the Lancaster House Treaty, and confirmed on July 12 by the two countries' Defence Ministers.

The assessment of the British Watchkeeper by the French Army will allow forces to define the conditions of close operational cooperation. The evaluation will begin this month with initial training of French operators. The flight campaigns will be conducted at Istres airbase in 2013.

The contract awarded by the DE&S on October 22 to Thales UK covers training of French operators and support for the in-flight evaluations, which includes transport, logistics and maintenance.

The Watchkeeper is tactical UAV intended for ground forces that the British Ministry of Defence acquired in 2005. SP

BAE Systems delivers 300th F-4 drone for US Air Force

BAE Systems successfully converted its 300th F-4 Phantom fighter jet into an unmanned flying drone for the US Air Force. The achievement is a significant milestone in the 16-year-long QF-4 programme, which provides full-scale, remotely-controlled aerial targets that the Air Force uses for weapons testing and aircraft training.

The QF-4 work is conducted at BAE Systems' 11,500-square-metre hangar in Mojave, California. Approximately 100 employees provide a range of services to transform decommissioned F-4s into QF-4s, a complex process that typically takes about six months. Depending on the condition of the F-4s, the services may include systems engineering and integration; electrical, mechanical, and software engineering; and various types of structural alterations.

"Our proven performance on this programme exemplifies our global capabilities to upgrade and modify aircraft," said Gordon Eldridge, Vice President and General Manager of Aerospace Solutions at BAE Systems. "We have been the sole provider of QF-4s for the Air Force since 1996. Congratulations to the entire Mojave team, which now has more than 35 years of combined experience and a solid track record of success."

There are 14 more QF-4s scheduled for delivery by the middle of 2013. SP

New low-cost precision weapon for UAVs

General Dynamics Ordnance and Tactical Systems and the US Army Armament Research and Development Engineering Center (ARDEC) have successfully demonstrated a GPS-guided munition for use on small UAVs.

The testing consisted of three separate engagements using a Tiger Shark UAV launching an 81mm mortar equipped with General Dynamics' roll control fixed canard control system and an ARDEC-developed fuzing solution. All three mortars were launched from a UAV at altitudes of approximately 7,000 ft and guided to within seven meters of a GPS-identified target grid.

"This effort demonstrated a low-cost, tactical version of a GPS strike weapon for UAV platforms," said Mark Schneider, General Manager of General Dynamics Ordnance and Tactical Systems' Seattle operations. "Together with ARDEC, we have demonstrated a weapon in the 10-pound class for tactical UAVs that can be used to quickly engage and defeat targets. Advancements in GPS targeting and data-link technology provide a built-in growth path for this demonstrated technology."

Designed to meet the needs of the Army, Marine Corps and Special Forces for a rapid target response capability, the ADM uses existing mortar inventory to provide a low-cost, lightweight weapon system with proven energetics. The General Dynamics' patented Roll Controlled Fixed Canard (RCFC) guidance kit, with an innovative flight-control and GPS-based guidance and navigational system adds precision-strike capability to existing mortars.

The nose-mounted guidance kit replaces existing mortar fuzes and has been successfully demonstrated on multiple mortar calibres in both air-drop and tube-launch applications. The kit provides a common, multi-platform guidance, navigation and control (GNC) and integrated weapon system for unmanned aircraft. SP

UAVs in disaster relief operations

Unmanned aerial vehicles (UAVs) are suitable, among others, for performing disaster relief tasks and dealing with emergencies, Hungarian Minister of Defence Csaba Hende said at the display of Hungarian-developed UAVs in Veszprém.

Minister Hende said that the Hungarian Defence Forces acquired 21st century reconnaissance capabilities with these aircraft. He added that with regard to the Force Protection level of our soldiers serving with missions abroad, it is of utmost importance that their movement is assisted by UAVs which reconnoiter their route, the attackers lying in ambush for them and the roadside bombs. SP

PHOTOGRAPHS: mod.uk, BAE Systems

CAE launches UAS mission trainer

Recently at the Unmanned Systems Canada conference, CAE announced the launch of its UAS mission trainer product.

The CAE UAS mission trainer combines an open architecture with commercial-off-the-shelf hardware and simulation software to provide a comprehensive, platform-agnostic training system for UAS pilots, sensor operators, and mission commanders.

It is currently being installed at the UAS Centre of Excellence in Alma, Quebec, where it will be used to train pilots and sensor operators of the Miskam UAS. CAE and Aeronautics are using the Miskam UAS, which is a Canadian version of the Aeronautics Dominator XP, to demonstrate how unmanned systems can be used for civil applications such as remote inspection of pipelines and hydroelectric installations, surveillance of forest fires, observation of critical natural resources and a range of other applications. SP

Northrop wins $38 million order for Global Hawk Engineering

Northrop Grumman is being awarded a $2,29,17,927 cost plus incentive fee contract for the software maintenance and flight test portion of the engineering and manufacturing development (EMD) block load effort, which provides for the necessary tasks that allow the contractor to participate in planning, provisioning, conducting, analysing and documenting an integrated Global Hawk combined developmental and operational flight test programme.

The location of the performance is San Diego, California. Work is expected to be completed by May 15, 2013. The contracting activity is AFLCMC/WIGK, Wright-Patterson Air Force Base, Ohio. SP

Sukhoi to build strike, recon unmanned planes

Russian aircraft maker Sukhoi is to focus on creating reconnaissance and strike unmanned air vehicles (UAV) in the near future, United Aircraft Corporation President Mikhail Pogosyan said at the Zhuhai Airshow China exhibition.

"UAVs are a strategic avenue for development for UAC, and Sukhoi is focused on creating reconnaissance and strike UAVs. But our firm plans on this are in the future," he said. Previous UAVs created for Russia's armed forces have been produced by Tranzas and Sokol, in addition to Sukhoi.

Sukhoi has designs on its website for a series of unmanned aircraft known as Zond, optimised for the carriage of surveillance and synthetic-aperture radars and electro-optical sensors. SP

General Atomics wins order for Reaper UAVs

General Atomics Aeronautical Systems, Poway, California, is being awarded a $125-million contract for 10 MQ-9 modified Block 1 aircraft. The location of the performance is Poway. Work is expected to be completed by November 28, 2014. SP

Sagetech, Arcturus demonstrate UAV operations using COTS NextGen ADS-B tracking

Avionics company Sagetech Corporation and unmanned aircraft manufacturer Arcturus UAV demonstrated joint flight operations between manned aircraft and a drone using the FAA NextGen automatic dependent surveillance-broadcast (ADS-B) system. The two companies simultaneously flew a manned Cirrus SR-22 and unmanned Arcturus T-20 in adjacent airspace while operators and the pilot used the ADS-B system to track one another's position and flight path in real time.

Recently in a demonstration over McMillan Airfield in Camp Roberts, California, both aircraft used Sagetech XP transponders to broadcast ADS-B position messages. The Cirrus SR-22 pilot and UAV ground operators received those messages with Sagetech Clarity receivers, which relayed them via Wi-Fi to an iPad. Using an Electronic Flight Bag app like Hilton Software's popular WingX, the iPad clearly displayed the positions of both aircraft as they flew—each a named icon indicating its exact location, heading and altitude.

"Even when I couldn't see the UAV visually from the cockpit, I could see it electronically on my iPad, including its heading," said Kelvin Scribner, the pilot of the Cirrus SR-22 and President of Sagetech. "And it was right there on the aviation charting app I already use in flight, Hilton Software's WingX."

"It's really that simple," Scribner said of the successful demonstration. "And that's the point—it's really that simple. We're demonstrating that the technology and the equipment are here now for joint manned/unmanned aircraft operations." SP

PHOTOGRAPHS: CAE, Northrop Grumman, Wikipedia

LT GENERAL (RETD)
P.C. KATOCH

Wisdom Speak

For once, someone spoke sense about Special Forces. At the raising day function of the National Security Guard (NSG) this October, former National Security Advisor (NSA) and currently Governor West Bengal M.K. Narayanan said, "A Special Force does not draw strength in numbers. Its strength lies in quality" – globally acknowledged Special Forces truth.

By adding that establishing NSG hubs in Mumbai, Hyderabad, Kolkata and Chennai post-26/11 was a major mistake, Narayanan inadvertently acknowledged two other Special Forces truth: Special Forces cannot be mass produced and Special Forces cannot be created after emergencies arise. Interestingly, these decisions were taken post-26/11 attacks by P. Chidambaram (the then Home Minister) when Narayanan was NSA.

The NSG was created under the National Security Guard Act of 1986. The original Draft CCPA Paper proposed a 25,000-strong NSG Force (16 battalions with three Force Headquarters located in various parts of the country) but following detailed deliberations, sensibly only two Special Action Groups (SAGs) and three Special Ranger Groups (SRGs) performing functions of cordon at the cutting edge were approved as per the Revised CCPA Paper. Bomb disposal and dog units were added later.

M.K. Narayanan

NSGs initial selection and training was done by Army's Para Commandos. The approved CCPA Paper categorically stated that Army will provide manpower for SAGs only for first 10 years (up to 1996) beyond which, personnel of police organisations were to man SAGs but this did not happen. In 2002, when the then Army Chief made a move to stop providing manpower to SAGs, the Cabinet Secretary protested that "NSG will come to a grinding halt" and persuaded the Army to continue existing arrangements. A major reason why SRGs have not come up to SAG standard is employment on VIP security despite the Special Protection Group (SPG) raised for this very purpose. In October 2012, 900 personnel of 11 SRG on VIP security were reportedly reverted for training in counter-terrorism but it wasn't clarified whether these 900 personnel were replaced by equal number of personnel from another SRG.

What should be of serious concern to policy-makers, strategists and security analysts is Narayanan mentioning in the same speech that the "NSG was caught in 'doctrinal confusion' on its role and specially when and how to use them". This is a sorry state 28 years after raising of the NSG. Obviously, Narayanan as NSA could not have his way because of the turf war between him and Chidambaram, amply covered in media.

But the million-dollar question that remains is who is responsible to work out and implement a doctrine and concept of employment for the NSG—NSA, Home Minister, Home Secretary, who? Who for that matter is responsible to define and execute a National Security Strategy, National Doctrine for Response to Asymmetric Warfare, National Doctrine and Concept of Employment of Special Forces, order a Comprehensive Strategic Defence Review, White Paper on Maoists Insurgency including Pakistani-Chinese support, National Policy for Military Diplomacy, so on and so forth; Defence Minister, Defence Secretary, Home Secretary, NSA, who? What, if at all, is the accountability of the Cabinet Secretary, Defence Secretary and the Home Secretary towards defence of India, both external and internal? Who from the bureaucracy is responsible to firm up the drafts of all these doctrines, policies and concepts, obtain government approval and implement them? Isn't the continuing apathy deliberate to circumvent accountability? What about conspicuous lack of domain knowledge, resultant cocooned mediocrity and fear/inability in accepting/grasping professional military advice?

Isn't it time these issues are debated in Parliament, responsibilities fixed and parliamentary oversight instituted? Questioned about India's nuclear forces recently, a Chinese official replied, "Why mention nuclear forces, Indians don't even know how to use their conventional forces". Can someone write this in Braille for our blind men? SP

The views expressed herein are the personal views of the author.

Questioned about India's nuclear forces recently, a Chinese official replied, "Why mention nuclear forces, Indians don't even know how to use their conventional forces"

PHOTOGRAPH: PIB

New data reveals Al-Qaeda-linked groups among most active terrorist groups in the world

Only one of the 5,000 terrorist attacks in 2011 is attributed to Al-Qaeda Central, but more than half of the top 20 most active perpetrator groups in 2011 are linked to Al-Qaeda, according to new data released in the National Consortium for the Study of Terrorism and Responses to Terrorism (START) Global Terrorism Database (GTD), based at the University of Maryland.

The most comprehensive, unclassified database of terrorist incidents, the GTD now contains information on more than 1,04,000 domestic and international terrorist attacks between 1970 and 2011 that resulted in more than 2,25,000 deaths and more than 2,99,000 injuries. These attacks are defined as the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious or social goal through fear, coercion or intimidation.

The top five most active perpetrator-groups of terrorist attacks in 2011 were: Communist Party of India-Maoist (CPI-M); Taliban; al-Shabaab; Boko Haram; and Revolutionary Armed Forces of Colombia (FARC).

While only one of the attacks in 2011 was attributed to Al-Qaeda Central—the August kidnapping of Maryland native Warren Weinstein in Pakistan—11 of the top 20 most active groups are linked to Al-Qaeda. Those groups alone carried out more than 780 attacks that resulted in more than 3,000 deaths and wounded 4,600.

Al-Qaeda-linked groups were responsible for four of the top five most lethal attacks in 2011. The attacks were Al-Qaeda in the Arabian Peninsula (AQAP), Yemen (March 28): 110 killed, 45 injured; Tehrik-i-Taliban Pakistan (TTP), Pakistan (May 13): 80 killed, 140 injured; al-Shabaab, Somalia (October 4): 70 killed, 42 injured; and Al-Qaeda in Iraq, Iraq (March 29): 65 killed, 95 injured.

"Total attacks in the GTD in 2011 continued an upward trajectory that began a decade ago, paced by the ongoing historic shift in attacks away from Al-Qaeda Central and toward its growing number of affiliates," said Gary LaFree, START Director and Professor of Criminology and Criminal Justice at the University of Maryland.

The other most lethal terrorist attack in 2011 was committed July 22 by Anders Breivik in Norway. He killed 69 people and injured at least 60 others when he opened fire on a youth camp hosted by Norway's ruling Labor Party. Additionally, earlier that day, he detonated explosives in an attack that killed eight people and injured at least 15 others. Breivik confessed to the attacks and in August 2012, was sentenced to 21 years in prison.

Terrorist attacks in just five countries accounted for 70 per cent of the terrorist attacks worldwide in 2011: Iraq (25.78 per cent); Pakistan (19.96 per cent); India (12.67 per cent); Afghanistan (8.35 per cent); and Russia (3.71 per cent).

With the release of the 2011 data, for the first time, the START Consortium also released four decades of geocoded GTD data for eight regions of the world. The geocoding allows researchers to chart the city-level progression of attacks across global regions and specific terrorist groups and movements, including: the spread of leftist violence in Europe in the 1970s; the diffusion of terrorism in Central American conflicts during the 1980s; the prevalence of ecoterrorism in the United States during the 1990s; and the contagion of terrorism in the Caucasus region during the 2000s.

"The advent of satellite technology and geographic information systems is revolutionising the study of crime, political violence and terrorism," LaFree said. "By releasing geocoded GTD data for the first time, we are making a down payment on what we hope will eventually be a fully geocoded Global Terrorism Database."

Top 20 most active groups in 2011

The following are the top 20 most active groups: Communist Party of India-Maoist (CPI-M); Taliban; al-Shabaab; Boko Haram; Revolutionary Armed Forces of Colombia (FARC); Tehrik-i-Taliban Pakistan (TTP); Al-Qaeda in the Arabian Peninsula (AQAP); New People's Army (NPA); Kurdistan Workers' Party (PKK); Baloch Republican Army (BRA); Al-Qaeda in Iraq; Garo National Liberation Army; Al-Qaeda in the Lands of the Islamic Maghreb (AQLIM); Lashkar-e-Islam (Pakistan); Abu Sayyaf Group (ASG); Islamic State of Iraq (ISI); People's Liberation Front of India; Haqqani Network; Lord's Resistance Army (LRA); Lashkar-e-Jhangvi; and Al-Qaeda-linked group. SP

International cooperation must to deal with terrorism: Shinde

The Union Home Minister, Sushilkumar Shinde, has said at the Interpol General Assembly meeting held recently in Rome, that international cooperation was essential to deal with the increasing threats of global terrorism.

Countering Violent Extremism and in particular terrorism is a key global challenge today. Terrorism by its methods and content rejects democratic and peaceful means of engagement. It attacks pluralism and multiculturism. Thus, for a liberal, democratic and diverse society and country like India terrorism and terrorist groups pose a challenge which has to be countered and effectively defeated.

India continues to face a high degree of terrorist threats on several fronts, in particular of cross-border terrorism. Terrorism in South Asia has increasingly emerged as an effective strategic weapon. Terrorist groups have demonstrated that with simple tactics and low-tech weapons, they can produce vastly disproportionate results as it happened in the 26/11 Mumbai terror attack. Terrorist attacks have exacted a heavy toll of life and property. Terrorists have tried to disrupt our way of life by attempting to initiate the element of fear. Fortunately, the Indian society has time and again shown its resilience and refused to be overawed by the terrorist acts.

The Indian Government is committed to combating terrorism/extremism in all forms and manifestations as no cause genuine or imaginary can justify terrorism or violence.

India has adopted a system to counter terrorism that gives primacy to dialogue, democratic political processes and the rule of law, and we deal with terrorism within the ambit of this structure. Post-26/11, we have raised the level of preparedness to meet the increasingly sophisticated terrorist threats. Secondly, we have enhanced the speed and decisiveness of the response to a terrorist threat or a terrorist attack.

To be effective, the fight against terrorism had to be long term, comprehensive and sustained. Strengthening of international cooperation is vital to ensure that action is not restricted simply to the perpetrators but also encompassed states, which sponsor, support or provide safe haven to terrorists. International cooperation on matters relating to terrorism is also effected through the mechanism of Interpol, of which India has been a member since 1949. SP

India, Britain decide to enhance cyber security cooperation

India and Britain have decided to step-up cooperation in cyber security during the Foreign Minister level talks of both the nations. In the previous Foreign Secretary level talks, the issues discussed were nuclear energy and counter-terrorism.

The representatives of both the nations, William Hague, the British Foreign Secretary, and Salman Khurshid, India's External Affairs Minister, after agreeing on the issues of cooperation on cyber crimes, which included cooperation in defining the ways of tackling the cyber crime, bilaterally issued a joint statement on the issues discussed.

The London Conference on Cyberspace of 2011 was attended at ministerial level from the Indian side and following the results of the conference, both the countries started its first dialogue on cooperation in October 2012. India and Britain upgraded the relationship of strategic partnership in the year 2004 and since then the foreign ministers of both the nations have been working on the areas of common interest in the cyber domain. SP

National security regime opened to private sector

National Security Advisor (NSA) Shivshankar Menon has opened up the national security regime to the private sector, with the launch of a cyber security report titled 'Recommendations of Joint Working Group on Engagement with Private Sector on Cyber Security.'

"The enormous potential for damage has made cyber security a major concern. There is no question that both the government and private sector need each other. The unique nature of this collaboration is because of the unique nature of the domain, and we need to develop the habit of working together that hasn't existed in the past," Menon said.

Deputy NSA Vijay Latha Reddy, said, "The primary objective of creating a permanent mechanism for public-private partnership (PPP) in the area of cyber security is to eventually establish India as the global hub for cyber security services, products and manpower."

Secretary, Department of Electronics and IT, J. Satyanarayana, said, "India requires a mind-boggling five lakh professionals to protect cyber space, but available talent is just a fraction of this, necessitating a rapid scale-up of capacities."

Chairman, Communications and Digital Economy Committee of FICCI, Virat Bhatia, said, "Cyber security needs an integrated effort from the government, industry and civil society. By its very nature, cyber threats could arise from international locations including from non-state actors, which makes international cooperation at a multi-stakeholder level a prerequisite."

According to the cyber security report, collaboration is invited across four issues: the setting up of a permanent JWG under the aegis of the National Security Council Secretariat (NSCS), with representatives from government and private sector; a permanent advisory committee called 'Joint Committee on International Cooperation and Advocacy to promote India's national interests at various international fora; and information sharing and analysis centres in various sectors to cooperate with computer emergency response teams at the operational level. The composition of these working groups will be finalised in consultation with industry associations. SP

PHOTOGRAPHS: MEA, PIB

Fortify cyber security: Sibal

The Union Telecom Minister, Kapil Sibal has called for a global effort to fortify cyber security, as it is important to conceal vital information for countries in various sectors such as information technology, energy, power, nuclear installations and banking.

Interacting with reporters at the Third Worldwide Cyber Security Summit in New Delhi, Sibal said that such security is necessary as online space doesn't have a boundary and information could travel miles, affecting or influencing sensitive matters.

"Cyber security is a very crucial issue. All the data is in the cyber space and nowadays all important transactions occur there. So, it is very important for us to conceal certain information and prevent infringement. There is no territorial boundary in the cyber space. We also need to classify correct and incorrect information and filter it later. When we put information on the Internet it is tough to keep a track of where it is being hosted. Hacking is another issue which has now transformed into a trillion-dollar industry." SP

Thales and Transas to develop full warship trainer

Recently, Thales Germany and Transas Marine International signed a cooperation agreement to develop and market a Full Warship Trainer (FWST). This modular simulation solution, which will be offered in various configurations, is the first of its kind to create a virtual simulation of an entire warship for training purposes: this encompasses the ship's control from the bridge, the work in the engine room, CMS (combat management system) training, realistic doorgunner exercises for helicopter missions or weapons training for boarding teams.

Holger Brandt, Vice President Defence & Security Systems Thales Germany and Ralf Lehnert, Managing Director, Transas Marine International

Thales Germany contributes to this cooperation its years of experience developing generic tactical and strategic trainers, as well as forward looking weapons simulators for civilian and military users. Transas has a worldwide reputation and comprehensive know-how implementing the latest generation of ship bridge simulators and engine room trainers. Since both partners plan to contribute their already widely proven product portfolio, a first generation configuration of the FWST is expected to be available to the market in short order.

Going forward, this innovative training system will enable individual teams to train various scenarios, for instance as part of the classical navigation training on the bridge, or a classic skirmish from an operations centre. But as part of the final deployment preparation, all individual teams of a ship's crew (e.g. bridge, operations centre and engine room, as well as deployed units, such as boarding teams and their airborne and floating security components) operate as a complex unit.

The FWST approach provides the option to train classic maritime scenarios, as well as current and future scenarios. In addition to playing the role of a training device, the FWST can also assume an important function for the development of deployment principles and procedures, and also as part of future procurement projects. Its overall modular approach also enables customers to flexibly expand individual training elements, thus customising their individual training centre to their respectively specific needs.

"We are delighted to have found a highly regarded partner for this project, who will contribute its comprehensive knowledge in the bridge simulation field and who is well positioned internationally", states Holger Brandt, Vice President, Defence & Security Systems, Thales Germany, on the occasion of the contract signing. Ralf Lehnert, Managing Director, Transas Marine, adds: "We expect to gain a clear competitive edge from this cooperation with Thales Germany. The synergies for the customer are clearly evident, since two technology leaders are combining their core competencies to create an exceedingly capable and cost-efficient team training system." SP

ANSYS bolsters product performance and integrity through deeper design insight

Building upon its comprehensive portfolio of advanced multiphysics engineering simulation technology, ANSYS has released version 14.5 to further support an integrated and streamlined approach to design exploration and the creation of a complete virtual prototype. New multiphysics capabilities are seamlessly brought together with the ANSYS Workbench platform to deliver unmatched engineering productivity and innovation.

In the real world, product performance varies by operating conditions, consumer usage, manufacturing processes and material properties. As products become increasingly complex, it is more challenging for engineers to fully understand the performance implications of design variations. Multiphysics simulation technology enables companies to make informed decisions based on insight gained from these analyses to deliver optimal results. Built on a platform that streamlines workflow among simulation applications, ANSYS 14.5 delivers many new and critical multiphysics solutions, enhancements to preprocessing and meshing capabilities as well as a new parametric high-performance computing (HPC) licensing model to make design exploration more scalable.

"It's no secret that while today's products are getting smarter, they're also becoming more complex," said Jim Cashman, President and CEO at ANSYS. "Having a holistic view of the product requirements and design is crucial to reduce design uncertainty and ultimately create a successful product. Our customers are depending on the depth and breadth of ANSYS 14.5 and our Workbench platform to confidently predict how their products will perform and, at the end of the day, provide good value and satisfaction to their customers." SP

Rockwell Collins unveils new app

Rockwell Collins has unveiled HGS Flight, a new app that lets users experience the company's head-up guidance (HGS) with synthetic vision on an iPad. The free app is available for download in the Apple iTunes App Store.

"Eyes-up, out-the-window flying with head-up guidance is the future and we're allowing anyone with an iPad to see first-hand the precision, increased situational awareness and efficiency that HGS brings," said Colin Mahoney, Vice President, Sales and Marketing for Commercial Systems at Rockwell Collins. "This app is meant for anyone, including current and future pilots, aircraft owners, passengers and any aviation enthusiast who wants to see what it's like to fly with HGS."

The HGS Flight app goes beyond standard head-up display symbology like flight path vector, speed and altitude, and lets users simulate flights using real-life advanced features that enable more precise flying. These include an approach guidance cue, speed error tape and acceleration caret. The app also features synthetic vision to allow users to see a virtual view of terrain despite any weather condition.

The videogame-style app offers a 'career' mode to build HGS skill, and a 'challenge' mode where users can define settings such as visibility and wind if they already are experts. SP

PHOTOGRAPH: Transas

Selex ES business structure

Allan Cook, Executive Chairman, and Fabrizio Giulianini, Chief Executive Officer of Selex ES, have presented the business structure of Selex ES.

Selex ES will be operational as of January 1, 2013, following the integration of Selex Galileo, Selex Elsag and Selex Sistemi Integrati. Selex ES will be a global business, with a workforce of approximately 17,900, revenues in excess of €3.5 billion, main operations in Italy and the UK and a strong industrial and commercial footprint in the US, Germany, Turkey, Romania, Brazil, Saudi Arabia and India.

Selex ES aims to develop and increase its market share in domestic and emerging countries by leveraging on its competencies in the air, land, sea, security and civil domains. The organisation reflects this position through the creation of three main divisions, each focused on a specific market and customer.

The Air and Space Systems division, led by Norman Bone, which includes all airborne capabilities, technologies and products ranging from UAS and integrated mission systems to radar, electronic warfare equipment, avionics, simulation systems, target drones and space sensors, payloads and equipment.

The Land and Naval Systems division led by Lorenzo Mariani comprises capabilities in the land and naval domains from the design of complex system architectures to tactical integrated systems, naval combat management systems, land and naval radar and situational awareness sensors and military communications infrastructures.

The Security and Smart Systems division led by Paolo Piccini covers network infrastructure and systems architecture capabilities for homeland protection and the complex urban environment as well as air and vessel traffic management.

The three divisions will be supported by an operations/engineering function led by Chief Operating Officer Alessio Facondo and will be organised by capability/technology and will supply the divisions with engineering and supply chain services and a number of staff functions. The Chief Financial Officer is Goeff Munday and Marketing, Sales and Business Development Executive Director is Gianpiero Lorandi.

"I am proud to introduce the Selex ES management team and organisation," declared Fabrizio Giulianini, CEO of Selex ES, adding: "I am confident that the customer-oriented approach that Allan and I have designed for our organisation will offer focused solutions to a broad range of civil and military requirements leveraging the breadth of our dual application technologies. Selex ES will have the strength and the skills to apply advanced information technology, system integration and sensor capability to develop sustainable, man-centric approaches to services and urban management and protection." SP

Saab and GE Aviation ties with Brazilian Aerospace Industry

Saab's technology transfer plan regarding Gripen NG for the Brazilian F-X2 fighter jet competition has been further strengthened by its partner GE Aviation signing MOUs with several Brazilian aerospace companies.

The MoU's enable Brazilian suppliers to become a member of GE's global supply chain and strengthens the in-country component of Saab's Gripen NG proposal to the Brazilian Air Force.

The MoUs with Grauna Aerospace S.A., Increase Aviation Service Ltda., TAP Maintenance and Engineering, Avio do Brasil and AKAER provide local expertise in different areas of aircraft maintenance, manufacturing and engineering.

"GE Aviation is pleased to build on our excellent relationship with Brazil, where we have developed cutting edge technologies with local industry and launched our most recent technology research center in Rio de Janeiro," said Tom Champion, GE Aviation Industrial Cooperation director. "With on-the-job training, GE will help build industrial capabilities in Brazil that will position the country to compete in the aerospace market for years to come." SP

Government nod for HAL divesting 10 per cent equity

The Union Cabinet has approved a proposal for disinvestment of 10 per cent of government equity in the country's only state-owned aerospace firm the Hindustan Aeronautics Limited .

"The Cabinet Committee on Economic Affairs (CCEA) has approved divestment of 10 per cent equity in HAL out of its holding on 100 per cent through an Initial Public Offer (IPO) in the domestic market as per the SEBI rules and regulations," an official statement said here.

Addressing the media on the issue, Finance Minister P. Chidambaram said it would be basically an IPO and for this purpose, a restructuring of the HAL board will have to be done. He said the IPO would be issued in the next fiscal only.

The statement said paid-up equity of the so far-unlisted company on March 31 this year was ₹120.50 crore. SP

Lockheed Martin acquires Chandler/ May, Inc.

Lockheed Martin nnounced the acquisition of Chandler/May, Inc., a company that specialises in the design, development, integration, manufacturing, and support of fully integrated mission critical systems for unmanned aerial systems (UAS) and command, control, communications, computers, intelligence, surveillance, reconnaissance (C4ISR) missions. Terms of the agreement were not disclosed and are not material to Lockheed Martin's results of operations.

As a proven ground control station integrator, Chandler/May, Inc. has delivered hundreds of integrated command and control shelters and portable ground control stations in support of US Army UAS programmes. They have produced more than 2,200 unmanned aerial vehicles (UAVs), including the Desert Hawk UAV, a programme for which Chandler/May, Inc. is a supplier to Lockheed Martin.

Chandler/May, Inc. has also developed a fully integrated UAS, consisting of the Fury UAV, SharkFin Mission & Flight Control System and Tactical Air Vehicle Control System (TACS) ground control station. Chandler/May, Inc. has facilities in Huntsville, Alabama, and San Luis Obispo, California.

"This acquisition expands our offerings in support of our customers' increased emphasis on advanced unmanned systems for the C4ISR missions," said Bob Stevens, Lockheed Martin Chairman and CEO. "This acquisition is consistent with our goal to maintain a portfolio of technologically advanced options that will generate value for both our customers and our shareholders." SP

Northrop Grumman Remotec Titus robot launch in December

Northrop Grumman Corporation's subsidiary Remotec Inc. will begin deliveries in December of Titus ™, the newest and smallest member of its Andros ™ line of unmanned ground vehicles (UGVs).

Northrop Grumman Remotec designed the lighter, faster, stronger and more intelligent UGV for a variety of missions, bringing new capabilities to the small UGV market.

Titus weighs 135 pounds and measures 27 inches long, 16 inches wide and just 23 inches high. It retains the proven four-articulator design that has given Andros vehicles the best performance for more than 20 years. The system also features a unique operator control unit featuring a hybrid touch-screen and game system-style physical controls.

"Titus represents the next-generation Andros," said Mike Knopp, Director, Northrop Grumman Remotec. "When we designed Titus, we challenged our engineers to not only retain certain capabilities but also to innovate and add capabilities – to really make the platform robust, highly functional and easy to use. They responded with a small UGV that was mechanically brilliant and reimagined the entire user experience."

Knopp said feedback the company has received from US and international military and first responders who have seen the system has "overwhelmingly validated that we achieved our objectives."

The Andros operating system provides much greater information to the operator while easing user workload through more interactivity with intelligent payloads such as chemical, biological, radiological and nuclear sensors, along with preset arm positions and the ability to "fly the gripper," which makes manipulation of objects much easier.

Titus was designed using a modular approach, which allows the robot to be quickly adapted for a variety of mission scenarios. Removable articulators, wheels and tracks provide users with the capability to navigate passageways that are only 16 inches wide or race down range to address a threat at a top speed of 12 kmph. Industry standard interfaces such as USB and Ethernet make Titus easier to maintain and upgrade and to incorporate payloads and sensors. SP

DARPA seeks multi-band, portable sensor to provide clear imagery to war-fighters

Clip-on or helmet-mounted camera system would fuse useful aspects of visible, near infrared, and infrared images into a single shot under all weather and visibility conditions

It is often the case with new military technologies that warfighters need to adjust to their equipment to access needed capabilities. As missions shift, however, and warfighters are required to work in smaller teams and access more remote locations, it is technology that must adapt if it is to remain useful. Desirable features for many new man-portable systems include small size, light weight, minimal power consumption, low cost, ease of use, multifunctionality and, to the extent possible, network friendliness.

The Defence Advanced Research Projects Agency (DARPA) created the Pixel Network for dynamic visualisation programme, or PIXNET, to apply these features to the cameras and sensors used by dismounted war-fighters and small combat units for battlefield awareness and threat detection and identification. PIXNET aims to develop helmet-mounted and clip-on camera systems that combine visible, near infrared, and infrared sensors into one system and aggregate the outputs. PIXNET technology would ingest the most useful data points from each component sensor and fuse them into a common, information-rich image that can be viewed on the war-fighter's heads-up display, and potentially be shared across units.

The base technologies DARPA proposes to use already exist and are currently used by war-fighters. However, these devices typically have dedicated functionality, operate independently of one another and provide value only to the immediate operator. Through PIXNET, DARPA seeks to fuse the capabilities of these devices into a single multi-band system, thus alleviating physical overburdening of war-fighters, and develop a tool that is network-ready, capable of sharing imagery with other war-fighters.

"Existing sensor technologies are a good jumping-off point, but PIXNET will require innovations to combine reflective and thermal bands for maximum visibility during the day or night, and then package this technology for maximum portability. What we really need are breakthroughs in aperture design, focal plane arrays, electronics, packaging and materials science," said Nibir Dhar, DARPA programme manager for PIXNET. "Success will be measured as the minimisation of size, weight, power and cost of the system and the maximisation of functionality."

To help boost processing power while minimising size and energy use, PIXNET sensors will interface wirelessly with an Android-based smart phone for fusing images and for networking among units. Although the primary focus of PIXNET is on sensor development, proposers are instructed to develop whatever apps are necessary to achieve the desired functionality for phone and camera.

In addition to technological innovation, proposers are encouraged to develop plans for transitioning the low-cost camera system into manufacturing. In the case of the helmet-mounted system, DARPA's preferred cost goal in a manufacturing environment producing 10,000 units per month is $3,300 per unit. SP

PHOTOGRAPH: Northrop Grumman

No evidence of security breach in Petraeus scandal: Obama

The US President Barack Obama has said that he has "no evidence" of security breach in connection with the resignation of CIA chief David Petraeus over an extramarital affair.

"I have no evidence at this point, from what I've seen, that classified information was disclosed that would have had a negative impact on our national security," Obama told reporters.

The FBI is said to have learned of the illicit relationship this past summer amid an investigation into Paula Broadwell's alleged cyber-harassment of a woman she reportedly perceived as a rival for the US spy chief's affections. SP

BARC security intrusions in the recent past

The Bhabha Atomic Research Centre (BARC), India's premier nuclear facility in Mumbai and also most vulnerable to a possible terror attack, was on top of the list of sensitive buildings surveyed and videotaped by 26/11 terror attacks planner David Coleman Headley. Headley surveyed the BARC complex for a possible terror strike.

Intelligence agencies have now reported, despite stepped-up security after the Mumbai terror attacks, at least 25 intrusions have been reported in two years. While Intelligence agencies noted 10 intrusions in 2010, another 15 were reported in 2011. The intrusions took place both from the coastline next to the complex and the various entry points. The Intelligence Bureau (IB) had warned the BARC after the intrusions were detected. SP

London Tower locks changed

Recently, the keys to the historic Tower of London were stolen, causing concern to authorities as the historical Tower houses the Queen's Crowns jewels. Police are now investigating how exactly a burglar broke into the well-guarded castle and managed to steal several keys from the site's sentry box before being apprehended.

The burglar was reportedly spotted by the Tower's famous guards known as Beefeaters, but the guards did not immediately stop the suspect, instead staying at their designated posts and radioing for help. Without a chase, the burglar made off with keys to the Tower's drawbridges and conference rooms and a restaurant, according to Historic Royal Palaces, the non-profit organisation that operates it. The Tower is one of the world's major tourist attractions, with more than two million visitors each year.

"The intruder did not gain access into the Tower itself," the spokeswoman said. "He did manage to get round the gate at the main entrance but was then apprehended and escorted off the premises."

The Tower of London is guarded by both the Yeoman Warders, nicknamed Beefeaters, who each must have completed a minimum 22 years' military service to guard the Tower, and a private security firm. Historic Royal Palaces defended its security protocol but also

acknowledged the procedures were, in this instance, "not carried out to the expected standard," and said they are pursuing a "staff disciplinary procedure." SP

Lebanese Army weapons stolen

In April this year, the Lebanese Army faced a major security breach as it was discovered that soldiers had been stealing standard-issue weapons and selling them to arms traders.

Army intelligence arrested an officer in charge of the arms depot of one of the battalions in the eighth brigade. He is known as K.H. from Aarsal, in the Bekaa, and was suspected of stealing a large quantity of weapons and ammunition, and selling them. Army intelligence arrested another officer from the same battalion, suspected of concealing information related to the same operation.

Investigations showed that more than 90 machine guns were stolen from the Army depot, in addition to large quantities of ammunition. Army intelligence has arrested over 10 people involved in this case in Bekaa and Tariq al-Jadideh in Beirut. SP

PHOTOGRAPHS: CIA, Wikipedia

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