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SPOTLICHT

Defexpo 2014 attracts over 550 companies

The 8th land, naval and internal homeland security systems exhibition — Defexpo 2014 —, assumes significance in the background of India's continued advancement of armed forces modernisation and strengthening the internal security mechanisms. India is one of the biggest arms spenders and most of it is acquired from overseas, as the pace of indigenisation is yet to gain traction.

In this background, Defexpo has come to be a perfect platform for establishing global linkages, partnerships and other agreements that help in India's quest of modernisation.

It was in 1981 that the Defence Exhibition Organisation (DEO) was created as a nodal agency in 1981 as part of the Department of Defence Production, Ministry of Defence, to promote and export potential of defence public sector undertakings, DRDO and the Ordnance



Factory Board. Over the years, it has immensely contributed towards export promotion activities on behalf of the Ministry of Defence. It is the nodal and coordination agency for the conduct of two major expositions in India, viz., Aero India and Defexpo India, which have seen exponential growth over the years. The DEO coordinates the participation of Indian defence industries in overseas exhibitions.

This edition of Defexpo to be held from February 6 to 9 has attracted over 550 companies from various parts of the world. While the companies will be exhibiting their wares, the organisers have lined up thoughtprovoking sessions. The Defence Minister A.K. Antony is inaugurating the seminar on 'Global Partnerships Towards Joint Development and Indigenisation.'

This year the Ministry of Defence has kept out nearly 27 Indian and foreign armament companies from participating in the Defexpo in the wake of scandals.



Cover:

The US-2 deal could result in a \$1.65 billion tab for India, which is looking at purchasing 15 of the amphibious patrol aircraft.

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From the **EDITOR'S DESK**





Need to go beyond the indigenisation mantra

hat India is going to be one of the top arms spenders is a given fact. It ranks eighth with an arms spend of \$46.1 billion which though is less compared to what the US and China spend — \$682 billion and \$166 billion respectively. But its top ranking as the biggest importer of arms for the third successive year, as per a Swedish thinktank, is a disturbing fact. It is more so when we hear that China has turned into a major exporter, selling its military ware mainly to Pakistan.

India has embarked upon major armed forces modernisation and simultaneously initiated indigenisation efforts, while the former has to be in place at the earliest, the latter is going to take time due to inertia of sorts — at the policy level, at the defence industry infrastructure level, and financially. This calls for a cohesive push on the part of various stakeholders, starting with the Ministry of Defence (MoD).

In line with this necessity and aspiration, Defexpo has been acting as a catalyst and this year the seminar theme is 'Global Partnerships Towards Joint Development and Indigenisation'. If this aspiration has to be fulfilled, India really needs to step on the gas to get the ecosystem in place.

In this issue, Lt General (Retd) P.C. Katoch has explained in detail how China is building its military capabilities and how it is widening the gap for India. We continue to import some 77 per cent of our defence needs. What we need to learn from China is optimising technology reconfiguration wherein available technology is integrated in multitude of combinations to attain self-reliance. The investments in R&D have to be stepped up.

Along with equipment issues, India has to grapple with leadership issues and General Katoch mentions that China soon will have a joint operational command whereas India has put it on the backburner. Military jointness is an imperative, not a luxury and the government needs to take some strong decisions.

In SP's Exclusives, we have an array of deals that are likely to happen during the course of the year and that includes Indian Air Force (IAF) picking up its 384 ASRAAM imaging infrared homing air-to-air missile from MBDA. Two other deals have reached finality in negotiations and those are for 22 AH-64D Block III Apache attack helicopters and CH-47F Chinook heavy-lift helicopters. There are going to be delays in some programmes, one of which is the Indian Navy's requirement of the highly anticipated naval multi-role helicopter (NMRH) requirement, envisaging 120 multi-role helicopters, said to be the single largest helicopter tender, as and when it goes out, by any Navy anywhere in the world.

As the Sole Official Media Partner of Defexpo 2014, we look forward to the event as we believe that to gain more traction for both modernisation and indigenisation efforts, it is imperative to be connected to the global industry.

We look forward to your feedback as to help us in improving our coverage.

Happy reading!



Publisher & Editor-in-Chief

SP's EXCLUSIVES By SP's Special Correspondent

INS Vikramaditya shines in tropical conditions



ne of the chief concerns for Commodore Suraj Berry and his crew when they sailed into Indian waters this month was that their 44,500-tonne vessel would have problems adapting to the dramatically different climate from what she was used to. But the INS Vikramaditya has sailed through, as it were, with remarkable robustness.

The Russian guarantee team on board the ship from Sevmash and Nevskoye Bureau had in fact voiced its concerns during trials last year in Severomorsk about how certain dynamic systems, hydraulics and other systems would function in tropical conditions. During her passage through the Arabia Sea, **SP's** learns that the crew conducted a planned series of 'tropical proof' manoeuvres to establish the vessel's robustness in warmer weather — still winter, but far warmer than the severely freezing temperatures of North-West Russia.

SP's has also learnt that a fresh round of 'tropical proof' trials will commence in May this year in the course of routine exercises, where the ship's systems will be meticulously observed in hot weather conditions out at sea, where the vessel will be pushed to the limits of its abilities, including speed, to ensure that ambient heat prevalent in Indian waters doesn't in any way hamper a ship that has never ventured out of freezing weather before this month. A top source on board the ship, currently docked at Karwar, said, "There is nothing to worry about so far. She has come through in style and we expect that to continue. She is a brand new ship in every respect."

IAF to sign missile deal with MBDA shortly

The Indian Air Force is expected to shortly close a deal with French missile house MBDA for 384 ASRAAM imaging infrared homing air-to-air missile as the new close combat missile for the Jaguar, replacing the now obsolete Matra Magic R550. After announcing its requirement in 2009, the ASRAAM was chosen by the IAF last year in a two-horse race against the Rafael Advanced Systems Python-5 of Israel, the latter separately selected as the secondary close combat heat seeking missile for the LCA Tejas.



The ASRAAM was demonstrated to the IAF at an RAF facility, UK in 2011 in the intended over-wing pylon configuration. The ASRAAM has a proven ability to be launched upwards to significant altitude and crucial for the Jaguar fighter bomber, since its mission profile largely necessitates flying at low altitudes. MBDA is understood to have won the competition also because it became apparent that integrating the Python-5, a heavier missile, would have required modifications that the IAF was not prepared to commit time for. A contract for the ASRAAM is expected to be signed within this financial year.





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$SP's \ EXCLUSIVES \ {\tt By SP's Special Correspondent}$

Chinook and Apache final, signatures likely in 2014

Boeing Defense is closely monitoring two major deals with the Indian Air Force that have reached finality in negotiations, though contract signature could slip into the next financial year, possibly under a new government post the national elections.

Air Force deals for 22 AH-64D Block III Apache attack helicopters and CH-47F Chinook heavy-lift helicopters are all but ready to be signed (price negotiations could be fully complete by the





middle of February), though the contracting atmosphere has slowed down as a result of national election season in the country and its attendant constraints. The previous IAF Chief Air Chief Marshal N.A.K. Browne had hoped to complete the crucial acquisitions in his tenure, though delays in late 2013, including the tragic demise of MoD Acquisition Manager Arun Bal, led to a significant limbo period before things continued.

IAF proposes to build Pilatus trainers by itself

n a dramatic new episode to the 'trainer wars' as they should probably be known now given the weekly intrigue surrounding the IAF-HAL battle over basic trainer aircraft, the Indian Air Force has pitched a proposal to the Ministry of Defence (MoD) offering that is ready to licence-build Pilatus PC-7 Mk.II propeller trainers at the No. 5 Base Repair Depot in Sulur near Coimbatore, under the Southern Air Command. The depot, functional since 1959, has specialised in maintaining the HJT-16 Kiran intermediate trainer and HS-748 Avro medium transport of the IAF for decades, but has built up fair infrastructure to house a basic trainer production line now, IAF sources say.

Swiss firm Pilatus, which has already supplied most of the 75 trainers contracted by the IAF in 2012, has given the IAF a note of endorsement on this account, which the IAF has duly forwarded along with its pitch proposal to the MoD in order to strengthen its case. With the new Chief of Air Staff Air Chief Marshal Arup Raha, like his predecessor, also not keen on HAL's trainer as a result





To have been confirmed that delays have once again cast uncertainty over the Indian Navy's request for propsal (RFP) for the highly anticipated naval multi-role helicopter (NMRH) requirement, envisaging 120 multi-role helicopters for the Navy to be procured through the 'Buy & Make' route of the defence procurement procedure. In all respects, it is likely to be the single largest helicopter tender by any Navy anywhere in the world, though a decision on an earlier competition means the RFP is likely to be out later rather than sooner.

A billion-dollar competition between the NH Industries NH90 and Sikorsky S-70B Seahawk for the separate multi-role



of timelines, inventory and cost economies, the defence public sector undertaking, as reported earlier by *SP's* is still powering through with the HTT-40, with sanction from the MoD. It will be interesting to see whether the MoD clears the IAF proposal, given it is predicated on a precarious situation: a major shortfall of nearly 500 pilots, and not enough cadets in each course. Sources say a Pilatus production line can be set up at 5BRD in Sulur in about 8-10 months, with production commencing by June next year. All of this is to meet a requirement of 106 additional basic trainers to take the total fleet strength up to 181 trainers.

helicopter (MRH) requirement remains delayed as a result of offsets snags, further delaying the Indian Navy's issuance of the NMRH RFP. Sources say things could finally be moving forward with the RFP, though it will not be released this financial year, and is more likely to be released towards the end of 2014 when there is greater clarity on the MRH itself.

As reported earlier by SP's, the Navy needs the NMRH choppers for anti-submarine warfare, special missions over sea and land and utility/troop/logistical operations. Unlike the MRH, which is a two-horse race between Sikorsky and NH Industries, the NMRH - which at 120 helicopters is perhaps the largest helicopter tender in the world - will be a three-way competition fought between the Lockheed Martin/Sikorsky combine offering the MH-60 Romeo helicopter, in service with the US Navy and Royal Australian Navy, the Airbus Helicopter EC725 (in service with the navies of Mexico and Brazil) - also pitched for the Indian Coast Guard's requirement of 16 shore-based multi-role helicopters and the NH90 in service with the navies of Netherlands and France. It is unclear at this time if Sikorsky will separately pitch a navalised version of the H-92 Superhawk, though there have been reports to suggest it may be considering the option.



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SP's EXCLUSIVES By SP's Special Correspondent

Flight trials for Indian Coast Guard CSAR chopper set to begin

irbus Helicopters is gearing up for flight trials of the EC725 Caracal to meet the Indian Coast Guard's requirement of 14 shore-based combat search and rescue and multi-role helicopters. The Caracal made it through technical evaluations late last year and will be put through the paces for what will be the Indian Coast Guard's first major helicopter purchase in decades.

Saddled with light helicopters like the Chetak and ALH Dhruv, the ICG has had a long history of abortive acquisition attempts, including an infamous effort to lease choppers from vendors as a stopgap to tide over procurement delays and



red tape. Sources say that there is plenty of time yet before a contract award in the CSAR competition, but that forward progress is heartening, given the major setbacks vendors like AgustaWestland have faced in the helicopter sphere in recent weeks.

The Airbus Helicopters EC725 will also be a bidder for the upcoming Indian Navy NMRH programme, in addition to HAL's stalled Indian medium-role helicopter effort. Airbus Helicopters is currently also in discussions with HAL to consider an all new production line for the EC725 in Bengaluru, to bolster its campaign for the supply of a large number of specialty helicopters to all three services, the paramilitary forces and perhaps for state executive transport.



Indian Navy's newgen ships face 'gun' uncertainty

single vendor situation could throw the Indian Navy's effort to zero in on a primary deck gun for its new generation indigenous frontline warships: specifically the seven Project 17 Alpha (follow-on Shivalik class) stealth guided missile frigates, three Project 15 Alpha (Kolkata class) and four Project 15 Beta guided missile destroyers.

The Indian Navy had identified the Oto Melara Otobreda 127/64 Lightweight (LW) naval gun and the BAE Systems Mk 45 Mod 4 127/62 naval gun system. However, with BAE Systems choosing not to bid for the competition, a peculiar situation has arisen. Oto Melara, the only company that has responded to the Navy's call for interest, is a subsidiary of Finmeccanica. While the Italian firm hasn't been officially blacklisted in the aftermath of the AgustaWestland VVIP chopper deal cancellation, speculation remains over whether Oto Melara has a fighting chance in any situation. However, the immediate chance of forward movement have been stalled by the more serious issue of non-competition.

India set to become largest operator of Heron UAS



www.ith the Cabinet Committee on Security clearing a deal for 15 additional IAI-Malat HERON-I medium-altitude long-endurance unmanned aerial systems (UAS), the Ministry of Defence (MoD) is likely to sign a contract with Israel next month, making India the largest operator of the type.

With over 40 already in service with the Indian Air Force and Indian Navy, and the Army looking to contract an unspecified number of longer-range variants of the Heron in the future, the numbers are on a steady upswing and not without reason. With the 40-odd airframes already in service undergoing endurance and sensor upgrade, the Heron-I has proven to be a deeply useful tri-service platform enmeshed well with Indian backbone technologies across the spectrum. IAI-Malat will, at Defexpo 2014, also pitch the long-range Heron TP drone for possible consideration as a loitering platform for extended border airborne surveillance and patrolling in the Northern and Western sectors. The Army currently operates Searcher Mk.2 drones, but is looking for higher performance systems given the increasing demands on unmanned surveillance.



SP's EXCLUSIVES By SP's Special Correspondent



Saab to field biggest team yet at Defexpo 2014

Swedish firm Saab, fresh after the delight of winning a major fighter competition in Brazil, will be fielding its largest team yet and display this year at Defexpo 2014.

After making a big splash with several new systems at Defexpo 2012, the company returns with a series of products covering the land, air, naval and civil security domains at Defexpo 2014, which will include the RBS 70 NG (which is in the final stages of the VSHORADS competition against the Igla-S of Russia and MBDA Mistral), BAMSE medium range,

all-weather capable air defence system, RBS15 long-range fire-and-forget surface-to-surface and air-to-surface, antiship missile, AUV 62-MR, autonomous underwater vehicle for enduring mine reconnaissance, AUV 62-AT autonomous underwater ASW target, SOTACS multispectral camouflage suit for soldiers providing protection against detection from visual observation, night vision devices and thermal sensors, Carl Gustaf multi-role, man-portable shoulder-fired weapon, SAVIT Small Arms Virtual Indoor Trainer, IDAS EW system designed to provide self-defence in sophisticated, diverse and dense threat environments, and LEDS 50 active protection for land vehicles.

DRDO may unveil I30mm Arjun Catapult at Defexpo 2014



fter successfully demonstrating the first prototype of the Arjun Catapult system to the Indian Army during automotive and firing trials in 2012, the DRDO is now all set to unveil the system for the first time at Defexpo 2014. Integrated by the Combat Vehicles R&D Establishment at Avadi near Chennai, the Arjun Catapult was developed by integrating a Russian-origin M-46 130mm 'Catapult' gun to a modified Arjun chassis and automotive system.

DRDO sources say, "The product is ready for its debut at Defexpo, but further improvements are under incorporation to firm-up the configuration for production and release to the user, which may take a few more months and final trials." While the system is not, by any stretch, a longterm solution, it is being pitched by DRDO as an interim gap-filler, to take care of the self-propelled short-range artillery requirements of at least three regiments while the larger acquisition plan picks up pace for 155mm self-propelled and towed artillery. The Arjun chassis was earlier the basis for the Bhim self-propelled howitzer. Efforts to replace the gun have yielded no result so far, with an earlier endeavour resulting in a single-vendor situation with the Samsung Techwin K9 turret. 🔊

Airbus MRTT contract signature afoot

A long-fought contract award could be in sight for EADS, now in its spanking new avatar Airbus Group, with the Indian Government likely to sign on the dotted like, finally, for six A330 multi-role tanker transports (MRTT) for the Indian Air Force.

SP's can confirm that with all documentation, negotiations and scrutiny from the Finance Ministry complete, the only thing remaining to be done it to tie up the paperwork, which could be done by the end of February. The company was recently asked to extend the validity of its commercial bid to July 31, 2014. A contract before the elections is possible,



say sources. The Airbus Military A330 MRTT is the only new generation strategic tankerflying and available today.

The IAF chose the jet in January last year in a competition that saw it square off against the in-service Russian Il-78M. The A330 MRTT for the IAF comes with a pair of under-wing hose and drogue pods, and or a third Fuselage Refuelling Unit (FRU). As demonstrated to the IAF during trials, the A330 MRTT can also be used as a pure transport aircraft able to carry 300 troops, or a payload of up to 45 tonnes. It can also easily be converted to accommodate up to 130 stretchers for medical evacuation (MEDEVAC). Till date, a total of 28 A330 MRTTs have been ordered by four customers: Australia, Saudi Arabia, the United Arab Emirates and the United Kingdom. 🔤

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MILITARY Viewpoint



LT GENERAL (RETD) P.C. KATOCH

For those who feel that HO **IDS** is providing necessary jointness, anyone who has served in HO IDS will vouch that the organisation is sans powers to enforce jointness in the Services, of which there are numerous examples. Military jointness is an imperative, not luxury. The government needs to take some strong decisions.

Joint commands with **Chinese characters**

hina pooh-poohed a report in *People's Daily Online* dated January 6, 2014, that People's Liberation Army (PLA) was going in for structural reforms through pilot establishment of a new joint operational command. The denial was perhaps because China has the history of showcasing a product after it is fully developed/established or is on the verge of it.

Though China's Ministry of Defence (MoD) termed this report as baseless, *People's Daily Online* concluded its finding by saying that the Chinese military has already made "positive explorations" in this regard and that acting on the decision of the Communist Party of China's (CPC's) Central Committee will deepen the reform on the basis of thorough research and feasibil-

ity study to find a path to establish the joint operational command system with Chinese characters. So, the proposal is apparently on stream. This is more so because: China has been studying and aping US military structures, tactics and technologies for past several years; Chinese Generals as part of Politburo influence and accelerate decision making; China is on the path of active militarism aimed at grabbing more territories on land and sea and; funds are no problem for PLA. On balance, the pilot joint

command may well emerge within an year of two of the decision taken.

But while China may soon have the joint operational command, when will the Indian military have its own joint operational command? This vital issue needs urgent focus in view of mounting threats to our national security — the two-and-a-half threat, the proxy wars by China and Pakistan and external forces keen to aiding instability in India in their own perceived national interests as we see happening in many countries including the Middle East.

There are multiple reasons for such decision not being taken. There always is resistance to change. There also is the bureaucratic fear that establishment of Theatre Commands would eventually lead to the establishment of a Chief of Defence Staff (CDS), which in turn is apparently perceived encroachment on bureaucratic turf. It is for similar reason that HQ IDS has not been permitted to merge into MoD, as was envisaged. Prime Minister Manmohan Singh addressing the Combined Commanders Conference in 2004 had stated, "Reforms within the armed forces also involve recognition of the fact that our navy, air force and army can no longer function in compartments with exclusive chains of command and single service operational plans." Yet going by media reports, the political authority is averse to even a permanent chairman of the Chiefs of Staff Committee (COSC), as recommended by the Naresh Chandra Committee, and operational responsibility of HQ IDS continues to be restricted only to Out of Area Contingencies (OOAC); a sliver of overall operational responsibility.

The permanent chairman of COSC can at best be a stopgap arrangement is no substitute for the CDS. By showcasing permanent chairman of COSC as pre-



lude to eventually establishing a CDS (slow change), the bureaucracy has effectively rolled the dice to delay the CDS for perhaps another few decades.

Since the political authority is dependent on bureaucratic advice, all the aces are held by the latter. Then is the perceived fear of loss of turf by the service chiefs themselves, despite HQ IDS having analysed five studies on Theatre Commands and examined the same at DGMO and equivalent level of the three services (or their representatives) and found

such re-organization to the benefit of all.

General S. Padmanabhan, former Chief of the Army Staff, had said, "There is no escaping the military logic of creating suitably constituted Integrated Theatre Commands and Functional Commands for the armed forces as a whole." Yet, the service chiefs continue to resist Theatre Commands. This has been the case in most countries. In Britain, after 18 years of squabbling, the political authority thrust jointness on the military by appointing CDS. For those who feel that HQ IDs is providing necessary jointness, anyone who has served in HQ IDS will vouch that the organisation is sans powers to enforce jointness in the Services, of which there are numerous examples. Military jointness is an imperative, not luxury. The government needs to take some strong decisions.

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



MILITARY Updates



India successfully test fired Agni-IV



gni-IV, the 4,000-km range nuclear capable ballistic missile was successfully launched recently from the Wheeler Island off the coast of Odisha. This was the third consecutively successful trial and the last one in the series of development launches. The missile took off majestically, rose to a height of over 850 km, covered the intended range in about 20 minutes, hit the target with two digit accuracy; meeting all mission objectives and proving the capabilities of the missile.

The Agni-IV missile propelled by com-

PHOTOGRAPH: DRDO

posite solid fuel rocket motor technology was launched from its road mobile launcher indigenously developed by DRDO. The long-range radars and electro-optical tracking systems (EOTS) located all along the coast have tracked and monitored all the parameters throughout the flight. Two ships located near the target point tracked the vehicle and witnessed the final event. The Defence Minister A.K. Antony congratulated the Director General, DRDO and Scientific Advisor to Defence Minister Avinash Chander and his team on the success.

Agni-IV is equipped with state-of-theart avionics, fifth-generation on board computer and distributed architecture. It has the latest features to correct and guide itself for inflight disturbances. The most accurate ring laser gyro-based inertial navigation system and supported by highly reliable redundant micro navigation system, ensured the vehicle reach the target within two digit accuracy. The re-entry heat shield withstood temperatures in the range of 4,000 degree Celsius and made sure the avionics function normally with inside temperature remaining less than 50 degree Celsius. Agni-I, II, III and Prithvi are already in the arsenal of armed forces, giving them reach

of over 3,000 km, giving India an effective deterrence capability. 52

Raytheon delivers 3,000th Tomahawk Block IV to US Navy

Raytheon Company has delivered the 3,000th Tomahawk Block IV missile to the US Navy as part of its ninth Block IV full-rate FY12 production contract. The US Navy continues to purchase Tomahawk missiles via the 2013 budget, and negotiations are ongoing for next year's production contract.

A major enhancement introduced with the Tomahawk Block IV missile includes a two-way satellite data link that enables a strike controller to redirect the missile in-flight to preprogrammed alternate targets or more critical targets. Tomahawk is employed from both surface- and sub-surface platforms, and more than 2,000 have been expended in real-world operations.

With a range of approximately 1,000 statute miles, the Tomahawk Block IV missile is a surface- and submarine-launched precision strike stand-off weapon.



Rockwell Collins showcases avionics and communications capabilities

Rockwell Collins is showcasing a broad range of proven, open and interoperable communications and avionics solutions for land, air and sea. Making its debut at Defexpo will be the next generation Talon RT-8400 international software defined radio, the Patrol Persistent Surveillance System, and the HeliSure family of products.

"These products demonstrate how Rockwell Collins is constantly innovating



to bring increased capability to our military customers," said Ram Prasad, Managing Director of Rockwell Collins India. "We believe these solutions have a direct application to India's current and future military needs and we look forward to demonstrating their value at Defexpo."

The Talon RT-8400 international SDR represents the next-generation programmable software defined radio, providing fully exportable secure communications.

The HeliSure family of products provides helicopter pilots with unprecedented situational awareness to help them meet the challenges of flying in an increasingly congested and hazardfilled airspace.

The Patrol Persistent Surveillance System is made up of a meshed network of unattended ground sensors and video cameras that monitor movement, sound and vibration. Alarms from the system are relayed to an operator console and are displayed on a digital map system.

OIS to showcase 3D Avian detection radar

The OIS family of companies, spearheaded by OIS-AT is showcasing its competitive and extensive range of advanced technology products and capabilities including R&D, manufacturing and systems integration capabilities.

OIS-AT's ability to innovate advanced products is best exemplified by the industry's first true 3D Avian (Bird) detection radar that is under the spotlight at Defexpo 2014. This product has been entirely developed, designed and manufactured by OIS-AT, which also owns the intellectual property rights of the product. The significance of this product derives from its technological and environmentally sensitive value to air-space security and as such would be of interest to countries world over. This unique product has been proven in operation as part of recent trials. This along with several other products in OIS' portfolio, further exemplify its ability to absorb and integrate complex technologies, provide complex solutions, systems integration and support to a host of companies in India and globally.

OIS-AT will be also demonstrating its capabilities as Systems Integrators of complex solutions related to homeland security. It's focus on dual use technologies allows the company to offer an ideal technology



and services platform to serve the Indian market. In this context, OIS-AT is highlighting its strategy for on-shoring advanced technologies either through system integration or via local manufacturing, so that they are available as indigenously developed products and solutions to customers.

OIS companies will be highlighting the range of capabilities including R&D and manufacturing to international companies who are expected to fulfill an offset obligation. OIS companies are eligible offset partners with appropriate certification. In addition to this, for those technologies and products that they do not manufacture in-house, OIS-AT has created a robust ecosystem of partnerships with SMEs who have proven manufacturing capabilities and whose products are made available to OIS-AT, who in turn acts as the prime for global customers.

Photonis features night vision sensor innovations



Photonis is featuring its latest Night Vision Sensor Innovations. With deep knowledge of Night Vision, Photonis fulfils the need to upgrade the Indian Army and Special Forces with modern Night Vision Technology. Especially for the need of Night Vision Devices for soldiers, night sights for rifles and night vision equipment for armoured and mechanised formations, Photonis display's its combat proven, ITAR free XR-5TM and XD-4 TM Image Intensifier Tubes, with Auto-gating. Also the black & white ONYX variant that is used in many Night Vision applications will be displayed.

As a world leading provider of innovative, cutting-edge, combat proven Night Vision solutions, Photonis will offer its wide range of technologies and capabilities in various fields of activities. Besides the Image Intensifier technology, Photonis also features its digital Night Vision solutions Nocturn. The Nocturn camera is a digital extreme lowlight Cmos camera, especially designed for high performance under both daylight and low-light level conditions (up to light level 3). With this the Nocturn perfectly fits applications where the high-resolution detection and ultra-high sensitivity are required under 24/7 conditions. Its small size, weight and power (SWaP) also make this camera module ideal for integration into aerial, mobile and hand-held surveillance systems.



MILITARY Updates



Diehl Defence demonstrates groundbased air defence system

Diehl Defence successfully demonstrated its ground-based air defence system IRIS-T SLM in the presence of international experts and military representatives from 16 nations at the Overberg Test Range in South Africa recently.

The IRIS-T SLM ground based air defence system is characterised by its modular design and open system architecture. In the current campaign, IRIS-T SLM



consisted of the new CEAFAR radar of CEA Technologies, Australia, a tactical operation centre (TOC) employing both the BMD-Flex command, control and communication system of Terma A/S, Denmark, and the Oerlikon Skymaster battle management system of Rheinmetall Air Defence, Switzerland, as well as the IRIS-T SL launching station with Diehl Defence missiles. All elements were integrated into the system by the Diehl Defence Sensor, Fire, and Weapon Control.

IRIS-T SLM detected the low flying target drone of type DO DT-25 and established a stable track which was classified as hostile. The missile was launched at a distance of about 20 km and intercepted the target with a direct hit. During the entire flight, target data updates from the radar were provided to the missile through the data link allowing the infrared seeker to lock onto the target in flight for the endgame. All hardware and software components performed flawlessly.

Atlas Elektronik to deliver sonar systems to Thailand

tlas Elektronik GmbH has been commissioned by the Korean yard Daewoo Shipbuilding & Marine Engineering (DSME) with the supply and integration of a bow sonar (ASO) as well as a low-frequency active towed array sonar (ACTAS) for a new frigate of the Royal Thai Navy. Delivery of the systems is planned to take place early in 2016.

Together, the two systems offer active and passive sonars for the detection, tracking and classification of underwater vehicles, such as submarines, torpedoes and unmanned underwater vehicles (UUV). In addition, these sonars are able to detect and classify small speedboats, divers or floating obstacles, e.g. containers or tethered mines.

The ASO bow sonar operates in the frequency range between 6 and 9 kHz and provides a surveillance radius of up to 15 kilometres around the ship. This makes it most suitable for the self-protection of the ship. The towed array sonar ACTAS operates in the low-frequency range from about 2 kHz and permits observation of the sea space at ranges considerably above 60 kilometres, depending on the propagation con-



operational range that by far exceeds that of radars and the weapons range of submarines. The system is therefore not only ideal for hunting submarines but also for the wide-area reconnaissance of surface combatants.

Both sonar systems represent state-ofthe-art from Atlas Elektronik and, besides newly developed signal processing methods, offer a unified hardware design with the corresponding simplifications in servicing and support.

Selex ES unveils Kronos multi-functional AESA radar



Selex ES, a Finmeccanica company, has successfully completed operational trials of all versions of its Kronos multi-function radar. These top-of-class sensors make the difference for those who operate in surveillance and air defence, both on land and at sea. Announced at Bahrain International Airshow 2014, this achievement will enable Selex ES to further increase its already significant market share in radars and systems for air and naval defence.

The Kronos radar exploits Selex ES's advanced active electronic scanning array (AESA) technology. It is able to perform surveillance, tracking, threat evaluation and fire control against multiple threats, simultaneously and automatically, at all altitudes. The radars provide particularly outstanding performance in detection range, hooking speed and tracking continuity, including at low and very low levels.

Kronos is now available in five versions, fixed and mobile, enabling it to fulfill all military requirements for surveillance and air defence, on land or at sea, using a single radar type. This allows the paring of top-class performance with lean maintenance, training and logistics synergies and heavily reduced electromagnetic chaos and frequency spectrum occupation at a national level.

Cometh zombie war

[By Lt General (Retd) P.C. Katoch]

here was plenty of commotion when UK's Mail Online quoting Anatoly Serdyukov, Russian Defence Minister, revealed that Russian arms procurement programme 2011-2020 would encompass introduction of super weaponry including weapon development based on new physics principles; directed energy weapons (DEWs), geophysical weapons, wave-energy weapons, genetic weapons, psychotropic/psychophysical weapons and the like.

The 'Zombie Gun' based on psychotropic principle of 'mind control' evoked most frenzy. Others quoted Russian President Vladimir Putin's plans to use the 'Zombie Gun' for achieving political and strategic goals (for use against enemies and dissidents), dubbing this development strange, alarming and morbidly intriguing. The insidious design of the Zombie Gun aims to attack the brain cells and central nervous system to either make the recipient perform according to the attackers will or alternatively turn the victim into a senseless moving object, perhaps behaving like a mad animal.

With such a weapon, it would be possible to transmit suggestions and a command directly into the victim's thought process. These guns

will use electromagnetic radiation like that found in microwave ovens. Putin reportedly said that such high-tech weapons systems will be comparable in effect to nuclear weapons, but will be more acceptable in terms of political and military ideology.

While the western media has been agog with the scare of such a weapon, it can be safely assumed that similar weapons would be planned to be productionised at least in the US and China and may be some other countries, if not already part of their offensive inventory — 'cognitive weapons' in the US? Research into electromagnetic weapons has actually been secretly on in

the US and Russia since the 1950s. Two years back western media had announced Russia possessed plasma weapons. It is unthinkable that US was not running parallel in the race, if not ahead.

Moreover, the overall concept of attacking the nervous system or attacking internal organs is hardly new and was has been worked upon continuously. After all that is what the nerve gases did decades back. Nerve gases have been used in conflict situation without compunction in the past. Incidents have also been hinted in media of low dose microwave weapons having been used for incapacitating recipients temporarily. A high dose microwave weapon on the other hand can kill the eyesight or heart of the victim.

Interestingly, some clubs in the US are already offering Zombie Survival Courses where instructors teach how to cope with zombie attacks. Such courses are designed to teach participants real-world survival techniques necessary to survive a zombie apocalypse. This includes choosing and setting up survival gear, first aid, equipment, firearms selection and group organisation for defence. Going a step further, Kansas has been witness to the first ever Zombie-Proof Condos that have been all been sold out like hot cakes at \$2 million per floor.

Consequences of application of psychotropic / psychophysical weapons can range from mass psychological diseases with both lethal and incapacitating outcomes, creation of an obedient mass of humanity through latent violent manipulation of behaviour and consciousness, and even mass ecological accident because of irreversible genetic mutations if infringement at gene level is resorted to.

Should India take note? It must, considering the Chinese (and its protégé Pakistan's) penchant for the asymmetric. Research must go into both defence and offensive defence through requisite counters. In the field of robotics, Prime Minister Manmohan Singh while inaugurating a new building of the Defence Research and Development Organisation (DRDO) in 2006 had announced that India will be pursuing technologies for developing a robotic army. The impetus obviously was the realisation that transnational actors and unconventional forces pose a growing threat when compared to the risk of a traditional inter-state conflict, plus robotic plans announced by other nations like the Killbots Army planned by the Republic of Korea:

How far has India progressed in robotics is not very clear but the pace appears rather slow. Though the DRDO recently announcement development of the 'Sarap' robot, it has taken many years to develop it. On the lighter side, Manas Chakravarti wrote in the *Hindustan Times* of June 26, 2011, that our Prime Minister was a robot, considering the deadpan expression, the glazed look and the monotone he makes during speeches and that the actual Manmohan Singh was elsewhere — one speculation being he being sighted on a Tahiti beach, stretched

out on a hammock between two palm trees, sipping *nimbu pani* while reading a book.

Mercifully, he did not speculate that Manmohan was the victim of a zombie attack and the gun was fired by someone from within India to keep his mind permanently under the attacker's control. But jokes apart, we have to leapfrog technology if we are to overcome our asymmetric infirmities and tilt them to in India's favour. No doubt MoD's 2010 Technology Perspective & Capability Roadmap identifies DEWs and ASAT (anti-satellite) weapons as thrust areas over next 15 years but given DRDO's track record, how much will

actually be delivered by 2025 is anybody's guess.

There is need to accelerate the pace of optimising lasers as well. Presently, only the Laser Dazzler that impairs vision temporarily to control unruly crowds is being operationalised albeit DRDO's Laser Science & Tech Centre (LASTEC) is developing Aditya - a vehicle mounted gas dynamic laser-based DEW system as a technology demonstrator and a 25-kilowatt laser system is under development to hit a missile in terminal phase at a distance of 5-7 kilometres. In terms of technology, India needs networked elements of national power, information dominance and information assurance, riposte ability to paralyze enemy C4I2 infrastructure, stand-off weapons to pre-empt enemy attack, adequate mix of DEW, PGMs, ASATs etc, ability to disrupt enemy logistics / sustenance, mix of hard kill and soft kill options, layered strategic air and theatre missile defence, competitive cyber warfare capability and ability to exploit cyberspace and electromagnetic domains.

Besides lasers, we should be able to exploit technologies like steerable beam, wideband / SDRs, network security, common GIS, data fusion and analysis, alternatives to GPS, dynamic bandwidth management, camouflage, etc. Space combat, cyber space combat, radiation combat, robotic combat, nano-technology combat will add to existing forms of combat, zombie war being the latest addition. We must be prepared to win such conflict situations. Leapfrogging technology requires special emphasis.





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India to buy 15 amphibious aircraft from Japan

Japanese Prime Minister Shinzo Abe's visit to India as chief guest at its Republic Day celebrations yielded some important advances in India-Japan relations. Notably on the security front, the two resolved to consult on national security matters between their two national security apparatuses (Japan's national security council having been formed recently). Additionally, the two will conduct a bilateral naval exercise in the Pacific Ocean in a move that is sure to draw China's attention.

The pending sale of the ShinMaywa US-2 amphibious patrol aircraft—a topic of interest for India since 2011—also inched forward. Abe and Prime Minister Manmohan Singh agreed that India and Japan would follow up on the sale in March with a joint working group meeting. Indian Defence Minister A.K. Antony is set to visit Japan at some point this year (presumably before May, due to the general elections in India) to finalise the deal.

The deal is significant for a variety of reasons. On the surface, it's another indicator of burgeoning cooperation between India and Japan on security matters. The deal is doubly significant in the context of India's relations with Japan because once India clinches the deal, it will become the first country to purchase defence equipment from Japan since the latter's self-imposed ban on defence exports began in 1967.

The deal is important for Abe as it would open up Japan's defence industry for additional contracts with foreign partners and stimulate Japan's defence industry. It should be noted that negotiations on the US-2 deal began in 2011 under the Democratic Party



Prime Minister Dr Manmohan Singh meeting the Prime Minister of Japan, Shinzo Abe, in New Delhi on January 25, 2014

of Japan, first under Prime Minister Naoto Kan and then under Yoshihiko Noda.

The US-2 deal could result in a \$1.65 billion tab for India, which is looking at purchasing 15 of the amphibious patrol aircraft. The deal is essentially a fait accompli (cleared politically at the highest levels in both countries) and the joint working group will iron out certain details including important modifications that would allow Japan to export the aircraft to India without violating its self-imposed defence export restrictions.

Beechcraft contracts with New Zealand for 11 T-6C trainer aircraft and training solution



Beechcraft Corporation announced that its defense company has signed two contracts to provide a comprehensive pilot training system for the Royal New Zealand Air Force (RNZAF). The foundation for the system is 11 Beechcraft T-6C Texan II turboprop military training aircraft. It also includes spare parts, training, logistics and maintenance support.

Beechcraft's Defense Company and Global Mission Support organisations partnered with Safe Air Limited and CAE as subcontractors on the two contracts. The acquisition contract includes 11 Beechcraft T-6C aircraft, two CAE operational flight training simulators, computer-based training courseware and customised RNZAF pilot training syllabi - all of which are integrated to create a comprehensive leading edge learning management system. A 30-year logistics support agreement provides turnkey support for the RNZAF flight training operations. The agreement consists of aircraft material support, full flight line and operational maintenance, as well as support and operation of the synthetic training devices.

The first four Beechcraft T-6C aircraft will be delivered to the RNZAF in November 2014.

Bangladesh buys Russian combat training jets worth \$800 million

Bangladesh ordered 24 Russian Yak-130 light fighter jets worth \$800 million in the final quarter of last year, a



Russian newspaper has reported.

The deal was paid for with a loan extended by Moscow to the country a year ago, the director of Russian state arms exporter Rosoboronexport said in a separate interview published by *Kommersant* recently, without disclosing the deal's price tag. The planes are to be fitted with Englishlanguage cockpits and delivery is scheduled to begin next year.

The Yak-130 is a lightweight subsonic trainer aircraft designed to mimic the cockpit and handling capabilities of Russia's more advanced fighters. The plane can also be configured to carry a small payload of ground attack and air-to-air weapons.



AEROSPACE Developments

Boeing starts assembly of final KC-46A test aircraft



Boeing is assembling the fourth and final KC-46A test aircraft for the US Air Force's next-generation aerial refuelling tanker programme at the company's Everett factory, keeping the programme on track to deliver the initial 18 tankers to the Air Force by 2017.

"All four test aircraft are moving through production to support our transition to ground and flight testing later this year," said Maureen Dougherty, Boeing Vice President and KC-46 Tanker Program Manager. "Our joint Boeing and US Air Force team continues to deliver on our commitments to the warfighter."

The aircraft are commercial derivatives of the Boeing 767 jetliner; their design features aerial refuelling capabilities that will be installed later at Boeing Field in Seattle. The 767 is a proven jet in service as an airliner, freighter and international tanker, with more than 1,060 delivered worldwide.

The first flight of an Engineering and Manufacturing Development KC-46 tanker programme test aircraft, without its aerial refuelling systems, will take place at midyear, followed by the first flight of a KC-46A tanker in early 2015. The first delivery of a production aircraft to the Air Force is planned for early 2016. Boeing expects to build 179 tankers by 2027 if all options under the contract are exercised.

Rafale further improves its versatility



The Rafale has successfully completed its first test flights in a new heavilyarmed configuration, comprising six air-to-ground precision AASM Hammer missiles, four medium- and long-range airto-air missiles from the MICA family, two very long range Meteor missiles, as well as three 2,000-litre fuel tanks. This preliminary work, self-funded by Dassault Aviation, is conducted in col-



laboration with the Direction Generale de l'Armement (the French Defense Procurement Agency) and will eventually lead to a complete clearance of the flight envelope.

By increasing the capabilities of its 14 hard points, including eight under the wings, the Rafale is the only fighter aircraft in the world capable of carrying 1.5 times its own weight. Its omni-role capability responds to the needs of countries requiring, at a controlled cost, an operational and versatile tool capable of fulfilling all missions more effectively, whilst mobilising fewer resources. Two Rafale aircraft represent the same potential as six Mirage 2000 class aircraft.

This new configuration, unmatched in the versatility and firepower it represents, has been made possible thanks to the open architecture of the aircraft designed from the outset to perform all of the missions previously assigned to seven different types of aircraft in France. As a veritable force booster, the Rafale is a tool for rationalising armies.

This new development, which combines great autonomy with the versatility of the weapons system, demonstrates the power and operational superiority of the Rafale, which already has a unique range of configurations, including the unique ability to strike deeply, with two Scalp cruise missiles and three 2,000-litre fuel tanks, as used by the French armed forces during Operation Harmattan in Libya in 2011.

India's VIPs will fly in Kazan helicopters

he Special Protection Group, which ensures the safety of the Indian Prime Minister, has selected Mi-17V-5 helicopters to transport VIPs. The 12 VIP vehicles will be chosen from the 150 helicopters delivered to India by the Kazan Helicopter Plant, which is a subsidiary of the holding company Russian Helicopters.

India's current Mi-8/17 VIP helicopters, which were acquired during the Soviet era, will be decommissioned in February and converted to Mi-17V-5 models. The renovated helicopters should be ready by the beginning of the 2014 Indian Parliament election campaign.

Eight helicopters were selected for transporting senior government officials, with an additional four reserved for the Special Protection Group. The helicopters feature missile defence and evacuation systems. All of the aircraft will be part of the government's communication squadron, which is part of the Indian Air Force's central command at Palam Airbase.

Additionally, by the end of 2014, Radio-electronic Technolo-



gies (KRET), which is part of Rostec, will provide Russian Helicopters with 76 sets of high-tech avionics, including the KNEI-8 navigation and electronic systems, for the Mi-17V-5. Ryazan State Instrument Plant, which is part of KRET, developed the system.

Northrop Grumman-built maritime surveillance demonstrator UAS surpasses 10,000 combat flying hours

Northrop Grumman Corporation built unmanned demonstrator aircraft used for maritime surveillance missions by the US Navy surpassed 10,000 combat flying hours supporting intelligence-gathering missions in the Middle East.

The broad area maritime surveillance demonstration (BAMS-D) aircraft are currently flying 15 missions a month and allow fleet commanders to identify and track potential targets of interest using a specialised suite of surveillance sensors.

Based on the Global Hawk unmanned air system (UAS) designed for land surveillance, the BAMS-D systems were modified to work in a maritime environment. The aircraft regularly fly missions more than 24 hours long at high altitudes.

The Navy is also using BAMS-D to understand how to best use the new surveillance capabilities for the MQ-4C Triton UAS. Currently under development, Triton uses an entirely new sensor suite optimised for a maritime environment.



The Navy's programme of record calls for 68 Triton UAS to be built. Northrop Grumman is the prime contractor for the programme and is using two test aircraft to develop Triton's capabilities through 2016.

Sagem wins contract for Sperwer drones to be deployed by French Army



agem (Safran) recorded a new order at the end of December 2013 from French defence procurement agency DGA for five additional Sperwer tactical drones (including two on option), to be deployed by the French Army. These drones will be delivered in 2015.

The Sperwer tactical drone system was deployed in Afghanistan from 2003 to 2012 by three members of NATO: Canada, the Netherlands and France. In the French Army, the Sperwer tactical drones system is operated by the 61st Artillery Regiment, which successfully deployed it in this theatre from November 2008 to June 2012 for protection, intelligence and ground support missions.

Based on the company's extensive experience with the Sperwer system, Sagem is now developing the Patroller[™] long-endurance tactical drone system to meet the French Army's future needs, as well as for international markets.

Sagem offers the full range of inhouse technological capabilities needed to develop and produce a state-of-the-art drone system: gyro-stabilised day-night optronic sensors, inertial navigation, avionics, data links, the ground segment (control stations, image processing, mission planning and restitution, etc.), integration, flight certification and flight testing of systems and payloads, etc.

Sagem has produced over 25 complete tactical drone systems to date, and 150 aircraft for these systems.

RQ-21A Blackjack begins operational test phase

The US Navy and Marine Corps' newest small unmanned aircraft system RQ-21A Blackjack began its initial operational test and evaluation (IOT&E) in early January at Marine Corps Air Ground Combat Center Twentynine Palms, California.

As part of IOT&E, this first low-rate initial production (LRIP) lot of the Blackjack, previously known as RQ-21A small tactical unmanned aircraft system (STUAS), will demonstrate the system's effectiveness and suitability in realistic combat conditions.

The Insitu Inc.-built Blackjack is a larger twin-tailed follow-on to the ScanEagle unmanned air vehicle. The system contains five air vehicles, two ground control systems, and launch and recovery equipment.

At eight-feet long and with a wingspan of 16 feet, Blackjack provides intelligence, surveillance, reconnaissance and communications relay to the warfighter on land and at sea. The air vehicle's openarchitecture configuration can integrate new payloads quickly and can carry sensor payloads as heavy as 25 pounds. Standard payloads include day and night fullmotion video cameras, an infrared marker, a laser range finder, a communications relay package and automatic identification system receivers.

First Reaper flight in Sahel

n January 16, one of the two French Reapers deployed to the Sahel since late December made its first flight. The aircraft took off from Niamey and flew for about 40 minutes.

This flight is an indication of the imminent operational introduction of these two MALE drones bought in 2013 to improve French surveillance capabilities in the Sahara-Sahel region.



INTERNAL SECURITY News



CBP flew its drones on behalf of other agencies

The US Customs and Border Protection (CBP) operates the largest drone fleet in the United States. The Defense Department has a much larger fleet, but it is prohibited from operating its drones in the United States for law enforcement missions. The Federal Aviation Administration (FAA) is working on opening US skies for public and commercial drone traffic, but for now CBP is the only agency permitted to operate drones on a daily basis within the nation's borders.

Most of the missions performed are for the Coast Guard, the Drug Enforcement Administration (DEA), and immigration authorities. Other federal, state, and local law enforcement agencies have been borrowing border patrol drones for surveillance missions, but the drones also serve in disaster relief, drug seizures, and in the search for missing persons.

The Washington Post reports that CBP has a fleet of ten unarmed Predator B drones equipped with infrared cameras and specialised radar. The drones are similar to the Reaper, an Air Force drone also manufactured by General Atomics, a drone producer based in Southern California.

Jenny Burke, a spokeswoman for CBP, says that 95 per cent of the agency's drone operations "are devoted to CBP's border

Secretary (Security) appointed

C. Meena, IPS, has been appointed as Secretary (Security), Cabinet Secretariat, with effect from the date of his taking over the charge of the post and till his superannuation (September 30, 2014).

Director of National Police Academy appointed

runa M. Bahuguna, IPS, presently working as Special Director General, CRPF, has been appointed as Director SVP, National Police Academy in Hyderabad with effect from the date of her taking over charge of the post and till her superannuation on February 2, 2017, or till further orders.

Meghalaya to form Special Force 10 to tackle internal security challenges

eghalaya recently got clearance from the Centre to form its very own special multi-task police force, which will be called Special Force 10, to deal with internal security challenges ranging from militancy to disaster management.

The strength of the force will be 1,795 including the supporting staff. One company of the battalion will be fully reserved for women. Multifaceted special trainings would be imparted to the commandos and the officers of the force to tackle any law and order situation.

The Chief Minister Mukul Sangma said, "It was stressed that the state government must invest adequately to ensure that we are capable of addressing internal security issues. There is a need to strengthen the state's internal security apparatus since law and order is the responsibility of the state government."

Mukul said, in the past the state government had to "run from pillar to post" to convince the Centre to deploy paramilitary forces in the state during adverse situations. However, central forces deployed



security missions." CBP released the overall totals of drone operations used for other agencies, but the agency did not release the names of those agencies.

in the state were also withdrawn on short notice due to emergencies in other parts of the country, he said, adding that the state needed to have its own 'special force'.

The Home Minister Roshan Warjri said the Special Force 10 would not only be tasked with counterinsurgency operations but would also be deployed to tackle riots, communal disharmony and various agitations.

Higher budget sought for internal security

The Union Home Ministry has informed the Parliamentary Standing Committee on Home Affairs about the budgetary constraints in strengthening country's law enforcement and security agencies citing the huge budget allocation of China to maintain internal security infrastructure. The panel has asked the Centre to consider higher budget allocation for country's internal security apparatus battling Jehadi terrorism, regional conflict and anti-India forces across the border.

The total allocation for India's internal security in 2013-14 was approximately ₹59,241 crore. In its submission to the panel, the Home Ministry said India's internal security budget is one-tenth of China's budget for internal security. The neigbouring country spends around \$123 billion every year to strengthen its forces and law enforcement agencies. The panel agreed that India is facing internal disturbances on several counts and internal security challenges in India are much more complex than China.

"There is a need for long-term strategic planning for internal security of the country for which enhancement in the budget is needed," the panel recommended.

The Committee, headed by BJP leader N. Venkaiah Naidu, recommended that allocation for Crime and Criminal Tracking Network Systems (CCTNS) Modernisation of Police forces and Security Related Expenditure should be enhanced to the projected levels so as to improve internal security scenario in the country.

Nexter Systems negotiates for the acquisition of Paul Boyé SA in order to form a CBRN European leader

s part of the development of its Equipment Business Line, the Nexter Group's ambition is to form a European leader dedicated to personal protection solutions for soldiers and security forces, particularly against CBRN threats (chemical, biological, radiological and nuclear).

Following the integration of Paul Boyé Technologies, with a

workforce of 250 employees and a turnover expected to reach 100 million euros, the new entity would be in a position to gain recognition in the highly competitive international market within its scope of activity: Detection, Individual protection, Collective protection and Decontamination. In order to support the integration within the new Nexter CBRN Business Line, Jacques and Philippe Boyé, the current shareholders and directors of Paul Boyé SA, have agreed to continue working with Paul Boyé Technologies. The aim of both companies is to sign a final agreement in early 2014 after having obtained approval from the relevant bodies and authorities.

BAE Systems appoints John Brosnan as Managing Director of India operations

AE Systems has named John Brosnan Managing Director of the Company's India operations with effect from January 2014. Dean McCumiskey who has successfully completed his tenure leading the company's India presence will be taking on a new assignment within BAE Systems. Further, Mark Simpkins has been appointed Vice President & General Manager for India and will lead the company's business development activities in the country.

Brosnan will build on the solid foundation the company has established in India and continue to lead the company's regional headquarters for South East Asia and India



in Kuala Lumpur strengthening relationships with customers and industrial partners, as well as developing new business opportunities across the region.

Previously, as a Senior Vice President for Offset and Operations for BAE Systems, Brosnan managed the delivery of the company's multibillion-dollar industrial partnership programmes in 20 countries across the globe. Commenting on his new role, Brosnan said, "India serves a key role in increasing our international business. Our longstanding history, solid footprint, and focus on forging domestic partnerships and on programme execution positions us well to enhance and grow our presence in India. I look forward to continue to do important work for India, in India, with India."

Dean McCumiskey said, "The contours of the Indian defence landscape are evolving making it one of the most exciting and promising markets internationally. With our long-term commitment in India, the breadth and depth of our global experience and expertise, our focus on partnering, and continued investment in the team, we are perfectly suited to fulfill our vision of becoming an integral part of India's indigenous aerospace, defence and security industry."

Herstal Group celebrates its 125th anniversary

Today, the Herstal Group people still share the same culture of innovation, quality and customer excellence as from the very start. On the eve of the Group's 125th anniversary, the Herstal Group and its people look forward to continuing this tradition.

Tracing its origins back to 1889 in Herstal, Belgium, the Herstal Group has made its name creating the finest firearms in the world. Through its famous brands, FN Herstal, Browning and Winchester Firearms, the Herstal Group has achieved a position among the worldwide leaders in its fields of activity: Defence/law enforcement, and hunting/shooting.

2014 celebrates 125 years of designing, manufacturing and commercialising top-quality products that represent the very best in technical innovation and know-how with one goal in mind: exceeding the ever-evolving expectations of customers and partners.

This well-established tradition is also the Herstal Group's commitment to the future. The Herstal Group has released a special logo to commemorate its 125th jubilee and support the events that will take place during 2014.

Astronics to acquire EADS North America's Test and Services division

stronics Corporation (ATRO), a leading provider of advanced technologies for the global aerospace and defence industries, announced today that it has entered into a definitive agreement to acquire substantially all of the assets and liabilities of EADS North America's Test and Services (EADS T&S) division for approximately \$53 million in cash plus a networking capital adjustment.

The agreement is expected to close in February, subject to normal closing requirements including Hart-Scott-Rodino approval. Upon closing, EADS T&S will be reported in Astronics' Test Systems segment.

EADS T&S, located in Irvine, California, is a leading provider of highly engineered automatic test systems (ATS), subsystems and instruments for the semi-conductor, consumer electronics, commercial aerospace and defence industries. EADS T&S provides fully customised testing systems and support services for these markets. It also designs and manufactures test equipment under the wellrespected test instrument brands known as Racal and Talon.

EADS T&S had 2013 sales of approximately \$70 million. Sales for 2014 for the business are expected to be approximately \$100 million.



TECHNOLOGY News



Alcoa armour endorsed by US Army Research Lab

Looa has announced its latest armour product is now specified for use by the US Army Research Lab (ARL) for use in US military vehicles. Alcoa's ArmX 5456-H151 armour plate meets the US military's highest performance standards for strength, blast absorption, and ballistics resistance for armoured combat vehicles where weldability is a material requirement. Alcoa aluminium and armour have been used by the military for decades in vehiclesranging from the Bradley Fighting Vehicle to the Humvee.

"Alcoa's military-grade aluminium alloys and products have helped the US military protect troops for generations," said Mark Vrablec, President of Global Aerospace, Transportation and Industrial Rolled Products at Alcoa. "Alcoa's latest innovation allows military vehicle manufacturers to continue building with the highest level of durability and troop protection through welding processes when assembling the vehicle, or performing repairs in the field.

"This new product offers more than 20 per cent improvement in strength compared with the baseline 5083-H131 weldable armour plate, as well as improved ballistic and blast performance," added Vrablec.

Alcoa's 5456-H151 armour plate, formerly referred to as CR56, joins the family of Alcoa next-generation ArmX brand armour solutions. Alcoa's ArmX 5456-H151 armour plate was developed by scientists at the Alcoa Technical Center, the world's largest light metals innovation and R&D centre located outside Pittsburgh, Pennsylvania, in collaboration with metallurgists and production engineers at Alcoa Davenport Works, the world's premier aerospace, defence, and automotive rolling mill. ArmX 5456-H151 armour plate will be produced at Alcoa Davenport Works, where manufacturing and



quality control testing is conducted to ensure the military's highest specifications for weldable aluminium armour plate are met.

Alcoa's ArmX 5456-H151 armour was tested and has been successfully demonstrated on the US Army's fuel-efficient ground vehicle demonstrator vehicle, known as FED ALPHA, a prototype vehicle that Alcoa helped develop to demonstrate lightweight, fuel-efficient technologies while maintaining vehicle durability and troop safety. FED ALPHA's lightweight aluminium structure makes the vehicle up to 10 per cent lighter than a comparably sized steel vehicle and reduces fuel consumption by about seven per cent.

US university gets funds to identity biological and chemical threats

team led by a George Washington (GW) University researcher will receive up to \$14.6 million over five years from the Defense Advanced Research Projects Agency (DARPA) to develop an approach for rapidly identifying the root of biological and chemical threats.

GE Global Research, Protea Biosciences Inc. and SRI International will collaborate with GW on this project, titled "New Tools for Comparative Systems Biology of Threat Agent Action Mechanisms."

The researchers—led by Akos Vertes, a professor of chemistry in the Columbian College of Arts and Sciences—are tasked with reducing to 30 days a process that can sometimes take years or even decades. If they are successful, the method could bolster national security efforts to combat these threats.

"Clearly, this is a very large challenge, and it's easy to understand why it's important to overcome," said Dr Vertes. "Discovering the cause behind a biological or chemical threat can provide information that not only counteracts the threat but also provides important information for pharmaceutical companies developing drugs that may be unrelated to the threat."

Biological threats such as anthrax derive from bacteria, while others derive from viruses, toxins or fungi. Chemical threats include substances that work to interfere with the nervous system or even cause asphyxiation. These threats have the potential to cause widespread, rapid injury or death.

To determine how a biological or chemical threat disrupts life functions, researchers must take a holistic view of the threat and the system in which it is working. Dr. Vertes and his team will examine the effects of toxic agents on genes, proteins and cellular functions using the scientific disciplines of transcriptomics, proteomics, metabolomics and bioinformatics to meet the 30-day challenge.

By combining an immense amount of data gleaned from these disciplines, researchers believe it will be easier to determine the workings of a given biological or chemical threat in a given environment.

One problem in achieving this, though, is the fact that the field of metabolomics isn't as well-developed as other scientific disciplines. However, Dr. Vertes and his team at GW recently developed the Laser Ablation Electrospray Ionization (LAESI) technique, which allows researchers to more effectively learn the chemical composition of a biological sample.

INTERNAL SECURITY Breaches



Heathrow airport security lax

aggage handlers at Heathrow are routinely flouting security procedures, an Evening Standard investigation has revealed. Despite rules that bags must be x-rayed and at least 10 per cent examined by handlers, it was discovered this was not happening and some bags were not being searched at all.

Evening Standard found it was worryingly easy to obtain a job in this security-sensitive area, with no criminal record checks, address or identity inquiries made. It took only 24 hours for a reporter to get work with the Excess Baggage Company, which has the exclusive contract to handle left luggage at Heathrow, Gatwick and several major railway stations. Once there, he uncovered alarming breaches of security.

The Environment Department recommends that all bags are screened by x-ray and that a proportion are then also subject to hand searches before they can be left at airports. The British Airports Authority (BAA) runs anti-terrorism training courses, which all Excess Baggage staff must attend, in which it teaches that 10-20 per cent of bags should be manually searched.

The BAA has ordered an investigation, saying it was "very concerned" at the findings.

IED blast at Manipur MLA's gate

espite the intense security measure taken up by the Manipur state police in various parts of the state capital, unidentified persons triggered a medium intensity improvised explosive device (IED) at the residential gate of Nameirakpam Loken, a member of the Legislative Assembly (MLA) at Sangaiprou Maning Leikai, recently.

The IED was placed close to the gate near the foot of the sentry post. The blast damaged a portion of the gate and a wall opposite to the MLA's residence. The MLA was present inside his residence during the time of the explosion of the bomb.

According to media reports, the bomb threat might have been carried out in connection with some monetary demands served by an underground organisation to the MLA. Later at around noon, Sangaiprou locals staged a sit in protest decrying the attack.

Two Mexicans nabbed in credit card fraud case

wo Mexican citizens who were arrested at the border used account information stolen during the Target security breach to buy tens of thousands of dollars' worth of merchandise,

according to a South Texas police chief.

McAllen Police Chief Victor Rodriguez said Mary Carmen Garcia, 27, and Daniel Guardiola Dominguez, 28, both of Monterrey, Mexico, had used cards containing the account information of South Texas residents stolen from Target. Rodriguez said they were used to purchase numerous items at national retailers in the area including Best Buy, Wal-Mart and Toys R Us.

Stephen Harper security breached, protestors at arm's length

rotecting the Prime Minister while still allowing him or her to interact with the public is a delicate balancing act for security experts. Recently, two protesters got within arm's length of Stephen Harper, Canadian Prime Minister.

Two climate-change activists slipped past layers of security at an upscale Vancouver hotel to hold up signs behind Harper while he was on stage at a closed event.

The pair - dressed in black to blend in with catering staff were quickly removed and no criminal charges were laid, but the incident is being reviewed by the Royal Canadian Mounted Police to see what more needs to be done to ensure the Prime Minister's safety. 💵







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