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RAF's C-17 Globemaster III

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New Beasts of Burden

To help alleviate physical weight on troops, DARPA is developing a highly mobile, semi-autonomous legged robot, to integrate with a squad of soldiers. PAGE 20

Coast Guard ship Rajshree commissioned

Indian Coast Guard ship 'Rajshree', the first of a series of eight inshore patrol vessels (IPVs) being built by the Garden Reach Shipbuilders and Engineers, Kolkata, was commissioned by Vice Admiral M.P. Muralidharan, Director General Indian Coast Guard, in the presence of Inspector General S.P. Sharma, PTM, TM, Commander, Coast Guard Region (East).

The 50 m long indigenous IPV displaces 300 tonnes and can achieve a maximum speed of 34 knots, with an endurance of 1,500 nautical miles at economical speed of 16 knots. Equipped with state-of-the-art weaponry and advanced communication and navigational equipment, it makes an ideal platform for undertaking multifarious close-coast missions such as surveillance, interdiction, search and rescue, and medical evacuation. The special features of the ship include an integrated bridge management system (IBMS), integrated machinery control system (IMCS) and an integrated gun mount with indigenous fire control system (FCS).

PHOTOGRAPH: Indian Coast Guard

Vice Admiral Muralidharan dwelt upon the criticality of capacity building towards tackling emergent maritime challenges. He reiterated the need for continuous vigil along the nation's maritime frontiers to preserve and protect India's maritime interests. He further stated that several far-reaching initiatives towards augmentation of manpower and force levels were under way that would provide the requisite fillip to the Coast Guard's capabilities. SP

Cover:
To help alleviate physical weight on troops, DARPA is developing a highly mobile, semi-autonomous legged robot, to integrate with a squad of soldiers.

Cover image: DARPA

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Drones give decisive advantage

As we head to participate in the 2nd International Conference on Autonomous Unmanned Vehicles (ICAUV) 2012 in Bangalore, there is no doubt whatsoever on the growing importance of unmanned vehicles in a variety of operations. The versatility of the drones have given the military, paramilitary and other agencies an edge in gathering intelligence, surveillance and reconnaissance and even as a weapon with destructive capabilities. The Israelis first demonstrated its lethality, followed by the Americans in Iraq, Afghanistan and Pakistan. Now drones are becoming commonplace.

In line with modern warfare techniques, the Indian Air Force (IAF) has indicated that it would be acquiring a substantial number of unmanned aerial vehicles (UAVs) in its fleet for surveillance and reconnaissance on the borders and as an effective weapon for deterrence. Presently, the Indian armed forces are largely using Israeli-made Searcher-II and Heron. While we await large-scale induction of UAVs, including indigenously produced such as Nishant, Rustom and Netra, there is need for considerable research and development efforts in this realm.

When on R&D, the Defense Advanced Research Projects Agency (DARPA) of the US has come up with some pioneering technologies. It is now working on reducing the load of a dismounted warfighter and has developed a four-legged robot to carry the load. As the dismounted warfighter could be saddled with over 100 pounds of gear, resulting in physical strain, fatigue and degraded performance, DARPA is developing a highly mobile, semi-autonomous legged robot (Legged Squad Support System or LS3) to integrate with a squad of soldiers.

Coming back to Indian acquisitions, two deals are still grabbing headlines – one is the medium multi-role combat aircraft (MMRCA) which Rafale has bagged and the other is the fate of the basic trainer – Pilatus. According to our Special Correspondent, the MMRCA battle isn't over just yet and that Eurofighter Typhoon is still working on a counter strategy to break back into the reckoning. The Special Report mentions of another war left for Rafale and Typhoon – Indian Navy's next fighter purchase.

The other deal which is in the limbo is that of basic trainer aircraft. Though the Swiss firm Pilatus aircraft has been shortlisted as it was the lowest bidder, it has been bogged down by controversies, including a protest by contender Korean Aerospace Industries. The deal has been on hold for almost 10 months. The government has shown intent of modernising the armed forces, but is still slow when it comes to decision-making.

Talking about governments, the UK Government has set out its plans to prioritise investment in order to ensure its armed forces continue to have state-of-the-art technology, equipment and support. A recent White Paper has indicated that the science and technology spending would be at 1.2 per cent of the Ministry of Defence's total annual budget.

In his forthright fortnightly column, Lt General (Retd) P.C. Katoch has underscored the importance of counter-terrorism agencies and has welcomed the approval of the National Counter Terrorism Centre, after 22 months of excruciating delay. We just hope that the powers that be understand the criticality of such an organisation and give it enough teeth and also shape.

Jayant Baranwal
Publisher and Editor-in-Chief

SP'S EXCLUSIVES

[By **SP's Special Correspondent**]

Dassault signs MoU with Reliance Industries

Dassault Aviation has entered into a memorandum of understanding (MoU) with Mukesh Ambani-promoted Reliance Industries Ltd (RIL) for joint opportunities in defence and internal security, that will almost definitely involve cooperation in the execution of the MMRCA deal. The partnership will also provide the French firm with a substantial offsets route into India — if it wins the MMRCA contract later this year, it commits to diverting $9-10 billion back into Indian industry. Industry watchers suggest that while RIL is a relatively new entrant into the defence sphere, the sheer size of the company and its backing will provide it with great flexibility and absorptive power for technology coming in from abroad.

It may be remembered that RIL's ambitious defence plans are being led by Dr Vivek Lall, who had been the chief of Boeing's defence business in India, earlier. Lall, in fact also had headed the commercial aviation business of Boeing before switching over to the defence business of Seattle-based company. While it is unclear what areas Dassault and RIL will cooperate on, it would presumably be in the areas of complex manufacturing, advanced systems and joint development aimed at the Indian defence market. Mukesh Ambani's most visible link with Dassault so far has only been the Falcon 900EX executive jet that shuttles him around. SP

Rafale, Eurofighter have one more war left in India

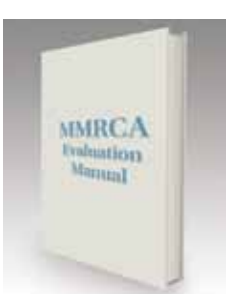
Technically, the MMRCA battle isn't over just yet, though Eurofighter is still working on a counter strategy to break back into the reckoning. However, indications suggest that the Rafale bid was significantly more competitive than the Typhoon's. Still, there may be one war left that the Typhoon and Rafale will fight. The Rafale and a concept navalised version of the Eurofighter are technically in the reckoning for the Indian Navy's next fighter buy. These are aircraft that will fly off the navy's second aircraft carrier. The navy is understood to be extremely keen that its new generation carriers (apart from the first one) have catapult launch systems.

While the Rafale and F-35C (also offered) are CATOBAR jets, the other three, the naval Typhoon, MiG-29K and concept Sea Gripen are proposed as STOBAR aircraft using a deck ski-jump. Industry sources indicate that the Rafale's advantage in the MMRCA could influence the way the navy thinks, in terms of platform commonality with the IAF, should the latter choose to conclude a contract with Dassault. The navy fighter competition is still in a pre-RfP stage, though it has gone through several rounds of information exchange and scrutiny. Lockheed-Martin has proposed by the VTOL F-35B and the CATOBAR F-35C variants, while Rosoboronexport will be making a full attempt to convince the navy to simply order more MiG-29Ks. A design freeze on a catapult launch configuration would narrow the competition down considerably. SP

PHOTOGRAPH: Eurofighter

MMRCA evaluation manual to be patented

The exhaustive and innovative matrix of procedures that the Indian Air Force and government brought into play to evaluate six relatively disparate fighter aircraft for the MMRCA requirement is to be patented and shared with friendly nations looking to purchase new jets. In the absence of any earlier experience in comparing such hugely different aircraft, in terms of weight-class, vintage and capabilities, the IAF was forced to evolve a fresh and objective method that left nothing to opinion and chance.



Assessing over 600 performance parameters, making a dramatic departure from the usual custom of treating flyaway price as an indicator of value and the entire method of distilling complex figures down to one consolidated figure indicating contract value has been a monumental effort, the details of which are certain to emerge over the next few months. Already, the IAF has received enquiries of interest in learning about how they went about doing it. For starters, Brazil, still grappling with a decision between the Rafale and Gripen is understood to have asked the Indian Government for unofficial advice on how to make a good decision. Countries that will be participating in joint air exercises with the IAF over the next year have also unofficially expressed interest in being briefed about how the IAF made its choice and the various parameters that came into play while making the decision. Former IAF chief Air Chief Marshal P.V. Naik had first mooted the idea of patenting the MMRCA evaluation manual into a template for fair and prudent selection of advanced systems. SP

[By **SP's Special Correspondent**]

Delayed decision on new ab initio trainer

By now, the Indian Government was expected to have cleared a deal for 75 basic trainer aircraft after it identified Swiss firm Pilatus Aircraft the lowest bidder last year. However, fresh questions based on a rival protest are understood to have slowed the award, becoming a cause of deep consternation within the IAF. Sources say Chief of Air Staff Air Chief Marshal N.A.K. Browne, who has frequently declared that he was hopeful the deal would be concluded soon, has already expressed the air force's worries to the Ministry of Defence (MoD). The deal has been virtually on hold for almost 10 months.

While MoD sources indicate that it is only a matter of time before the Cabinet Committee on Security takes up the proposed deal and approves it, there are problems that the government is now forced to deal with. Pilatus was identified as the lowest bidder when commercial bids of three firms – Pilatus, Hawker-Beechcraft and Korea Aerospace Industries (KAI) – were opened in May last year. In June, the process of award came to a grinding halt when KAI wrote to the Defence Ministry protesting the proposed award alleging that Pilatus had held back certain cost information, including the cost of tech transfer, which automatically made their package cheaper. Sources say the government is still dealing with allegations raised by the Korean runner-up despite the IAF chief noting on more than one occasion that the matter had been settled.

In September 2011, Defence Minister AK Antony told Parliament that he expected the deal, worth ₹2,900 crore (approximately $596-million) to be concluded by March 2012. In November, the IAF chief revealed that the Finance Ministry had cleared the deal, despite a significant budgetary overrun. On January 4 this year, it is understood that the deal came up before the CCS along with a contract for MICA missiles for the IAF's upgraded Mirage 2000 jets. However, while the latter was approved, the Pilatus deal remained hanging, presumably as a result of queries that have been raised. Pilatus has declined to comment on any requests for information it has received from the government, or if it has at all.

Of the five aircraft that competed for the contract, only the Hawker-Beechcraft T-6C Texan-II, Pilatus PC-7, and KAI KT-1 were found technically compliant, in that order. The Swiss and Korean aircraft pipped the American contender on price.

The tentatively delayed trainer deal is only a reminder of the woeful state of the IAF's trainer fleet and infrastructure, one that the IAF chief is seized of.

Considering that the Indian Government took close to two decades to finalise a contract for badly needed advanced jet trainers (the deal finally went to BAE Systems for the Hawk 132 in March 2004), concerns are always pertinent when it comes to importing equipment critical to training and having a direct bearing on the quality of pilots that take on operational duties. For years, the IAF has had to make do with shortfalls of one type of trainer or the other, and conduct training in a patchwork of improvisations that are simply unsustainable in the long term. Even now, with the troubled fleet of HAL HPT-32 Deepak basic trainers grounded and all but declared unsafe to fly, cadets at the IAF academy don't get requisite time on basic trainers, and are pushed in early onto the more demanding Kiran Mk.2 intermediates and then MiG-21s. It is only from the December 2012 course that the Hawks at Bidar will take on lead-in or Stage-3 training that gets pilots into final mode for fast jets in service.

HAL is finalising plans to fit some of the grounded HPT-32s with ballistic recovery parachute systems – ad hoc equipment that does not address the core issue with the engine and fuel transmission system that has caused so many accidents. Sources say HAL has invested a measure of time and funds in trying to identify and correct the safety issues with the HPT-32 but has been unsuccessful so far. Fitting the aircraft with recovery parachute systems all but pronounces efforts to deal with the engine issue dead. The Kiran Mk.2 trainers are by no means steady aircraft. They are also old and ageing, and the IAF has floated a tender to have some of their Viper Mk22-8 turbojet engines overhauled on a fast-track basis. The IAF's Surya Kiran aerobatics team was, in part, disbanded prematurely because the IAF needed the extra Kirans to provide Stage-2 training at the Academy (it will be re-raised with Hawk trainers, and, subsequently with the HJT-36 Sitara). HAL's intermediate jet trainer HJT-36 Sitara, which had been progressing well, suffered a major setback when one of its prototypes crashed in April last year near Bangalore, the programme's third accident since 2007. The aircraft's initial operational clearance has already been pushed to next year.

Finally, the Pilatus deal itself – the result of the IAF finding itself forced to buy 75 aircraft off the shelf with no real choice – is due in large part to HAL's failure to foresee the troubled HPT-32's downward spiral as a safe and viable training platform, which is why the first time the public got to see a model of HAL's Deepak replacement, the HTT-40, at Aero India 2011 last February. The aircraft is still in its definition stages and is nowhere near completion. The Department of Defence Production, which has been blamed for failing to plan ahead for such a capability void, has shrugged the blame despite reprimands from the Finance Ministry that a country that has built or assembled fighter aircraft is being forced to spend precious resources importing even simple single-engine propeller trainer aircraft. SP

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PHOTOGRAPH: Pilatus

UK plans further induction of state-of-the-art defence equipment

ST Kinetics' Warthog for UK MoD

The UK Government has set out its plans to prioritise investment in science and technology, in order to ensure the UK's armed forces continue to have state-of-the-art technology, equipment and support.

A government White Paper on "National Security through technology" pointed out that the intention was to sustain science and technology spending at 1.2 per cent of the Ministry of Defence's (MoD) total annual budget.

The paper sets out how the government will provide the best equipment for the UK armed forces and security services and achieve best value for money for UK taxpayers. It provides clear principles that will underpin the relationship with industry as the MoD invests more than £150 billion in military equipment over the next decade.

The White Paper follows a commitment in the strategic defence and security review to outline the government's future approach to working with the defence and security industries. It has been developed jointly by MoD and the Home Office, following extensive consultation, and includes plans to: protect the essential science and technology budget; and ensure that the armed forces continue to have state-of-the-art technology, equipment, and support. The MoD is prioritising investment in science and technology (S&T) and the White Paper states the government's intention to halt years of decline in spending on defence S&T by maintaining spend at least at the current 1.2 per cent of MoD's budget, spending over £400 million each year.

As the defence sector is vital to the success of the UK economy, the MoD has decided to continue help all UK-based suppliers obtain export orders and promote products abroad while ensuring security and sustaining the core values of human rights and democracy. Ministers will be closely involved in supporting defence and security exports, exportability will be built into new acquisition requirements, coordination across government will be improved, and new arrangements developed to provide the training that overseas customers often seek.

The paper also mentions encouraging small and medium enterprises (SMEs) which are currently awarded 42 per cent of MoD's equipment contracts (worth almost £1 billion per year) and many more contribute to defence and security programmes as subcontractors. The new measures in the White Paper will make it easier for smaller contractors to compete for government tenders, help them to develop new products, and provide expert advice to help them export.

PHOTOGRAPH: ST Kinetics

The Minister for Defence Equipment, Support and Technology, Peter Luff, said, "Our armed forces must continue to have innovative, high-technology equipment to give them a battle-winning edge, so we will support the development of defence technology directly and protect the amount we spend.

"We had to take tough decisions to tackle the £38 billion black hole this government inherited, but we are now close to achieving a sustainable and balanced budget for the first time in decades.

"This will mean we can start ordering new equipment for the armed forces with confidence and will help provide the clarity industry needs to invest in the right areas.

"We plan to spend over £150 billion on defence equipment over the next 10 years. We will strongly support responsible exports, increasing the market opportunities for all defence and security companies and encouraging them to invest in the UK.

"If we can save money and get the capability now rather than later, our budgets will go further and the country will be better defended.

"Britain's smaller businesses are the breeding ground of genuine innovation, developing new technologies that provide our front line forces with battle-winning advantage. Last year the MoD spent almost £1 billion directly with smaller businesses and we want to see that figure grow.

"We will strengthen the ability of smaller firms to compete for defence and security contracts, making sure their innovation is fully tapped."

The Home Office's Crime and Security Minister, James Brokenshire, said, "National security is the first priority of the government and we want our counter-terror and law enforcement agencies to have the best capabilities and expertise.

"The recommendations in the White Paper will help us assist UK-based suppliers in obtaining export orders and increasing opportunities for small and medium enterprises.

"A healthy and competitive UK security industry—building on our experience hosting the Olympic Games–will help contribute to growth and support our national security objectives."

The White Paper, along with the MoD's 10-year equipment plan—to be published later this year—will set out in detail the military equipment programme the government will undertake and how we will work with industry.

The White Paper discusses the underlying concepts of sovereignty and explains how future international acquisition programmes will be set up, emphasising the government's preference for bilateral programmes wherever possible.

It also examines the future of government in-house and science capabilities, international collaboration on science and technology, and wider government action to address the skills agenda.

Recognising the wider impact that government spending choices on defence and security can have, it announces the establishment of a new ministerial working group to coordinate the cross-government aspects of the new approach.

This White Paper is part of a broader approach to defence transformation which encompasses Lord Currie's review of Government Single Source Pricing Regulations and the Materiel Strategy, which will transform the MoD's equipment-buying procedures, making them more cost-effective and efficient.

Already the MoD has introduced a number of measures to help SMEs: to enable firms to meet potential bidders, the Next Generation Estate Contracts Team is running special networking sessions and has created an online 'Potential Bidders Directory' which provides contact details for organisations with a registered interest in each contract, so that SMEs may approach them.

The MoD now advertises lower value contracts, which may be more attractive to SMEs, on the contracts finder website.

It has revised internal guidance to ensure that SMEs are not rejected on the basis of rigid turnover-to-contract value ratios without proper assessment of their actual capacity and potential.

A dedicated SME group in the new Defence Suppliers Forum has been created, chaired by a MoD Minister, to provide a better 'voice' for small suppliers.

The Centre for Defence Enterprise has successfully provided access to the defence for innovation SMEs, and this White Paper builds on this to broaden its remit to cover security and seek ways to provide even more support to SMEs, particularly in bringing potential products to market. SP

Peter Luff with a Foxhound armoured vehicle

Voyager - the RAF's new strategic tanker aircraft

PHOTOGRAPHS: Andrew Linnett / UK MOD

Defence Minister A.K. Antony reviews TROPEX 2012

Theatre level readiness and operational exercise (TROPEX) is conducted by the Indian Navy as a major annual exercise of the combined fleets to test its preparedness to deal with any contingency. Almost 40 ships including submarines and 13 naval aircraft and UAVs participated in the exercise held this year. Units of the ICG and 18 aircraft of the IAF also took part in the exercise which was conducted off the Visakhapatnam coast. Defence Minister A.K. Antony spent two days with the Indian Navy on February 7-8, accompanied by the CNS Admiral Nirmal Verma and the FoC-in-C, Eastern Naval Command Vice Admiral A.K. Chopra to witness the exercise.

The highlights were: two completely networked fleets, widely dispersed across seas in the Indian Ocean, operated in a dense electronic environment to match their professional and technical proficiency. Jointmanship was added by the participation of IAF aircraft such as AWACS, Sukhois, Mirages and Jaguars. The Defence Minister witnessed INS Shivalik execute various evolutions including a 'surface gun shoot' and Jackstay with INS Shakti in copybook fashion. The BrahMos, supersonic long-range anti-shipping missile, was launched successfully from a recently upgraded Ranvir class destroyer.

The Defence Minister also witnessed a full scale air power demonstration from INS Viraat with Seakings, Sea Harriers and Chetaks participating. Likewise, the MARCOS carried out a precision landing on the flight deck in the middle of the sea using combat free fall technique.

Addressing the 'Viraatees', the Minister said that he was "very very happy to be on India's most prestigious INS Viraat" and added that by early next year the Indian Navy is likely to operate one more aircraft carrier Vikramaditya and the indigenous aircraft carrier some years later. Stating that 26/11 changed the security matrix, he said that the entire nation now acknowledges the critical requirement of maritime security and the important role of the Indian Navy. Complimenting the men on their professionalism, the Minister added, "Wherever we go (abroad), Indian Navy is the most sought after service...numerous countries want more cooperation with the Indian Navy." SP

BAE Systems and General Dynamics to develop affordable 'Smart' 81mm mortar round

BAE Systems and General Dynamics Ordnance and Tactical Systems have teamed to develop, demonstrate, and produce the 81mm roll controlled guided mortar (RCGM), an affordable 81mm precision mortar round. The companies have been maturing the guided mortar technology over the last 12 months and will be conducting tactical demonstrations early in 2012.

The teaming arrangement between General Dynamics Ordnance and Tactical Systems, a business unit of General Dynamics and BAE Systems' Munitions business, will leverage their respective strengths to provide a low-cost, highly affordable, precision mortar. The 81mm RCGM uses the current UK L41 round and US M734A1 fuze, but incorporates GPS guidance and General Dynamics' patented roll controlled fixed canard (RCFC) technology to provide a precision strike capability.

Michael Wilson, President of General Dynamics Ordnance and Tactical Systems said, "Our teaming with BAE Systems will provide the infantry with a lightweight, portable, precision strike capability based on General Dynamics' innovative RCGM technology. By using existing warheads and fusing with our low-cost control and guidance system, we can offer a truly affordable precision mortar round to the US, UK and allies across the world." SP

PHOTOGRAPH: PIB

Singapore and Italy sign MoU on defence cooperation

The Singapore Permanent Secretary for Defence Chiang Chie Foo and Italian Under Secretary of State for Defence Dr Filippo Milone signed a memorandum of understanding (MoU) on defence cooperation between the Singapore Ministry of Defence and the Italian Ministry of Defence.

The MoU facilitates defence cooperation in areas such as defence policy, military education and training, research and development as well as logistics. The signing of the MoU underscores the warm and growing defence relations between Singapore and Italy, as well as both parties' commitment to broadening defence cooperation in mutually beneficial areas. SP

Raytheon, US Navy complete JSOW C-1 developmental testing

The US Navy completed developmental testing (DT) of the Raytheon Company joint standoff weapon (JSOW) C-1. The conclusion of DT brings US and allied warfighters one step closer to being able to engage moving ships as far as 60 nautical miles (70 statute miles) away with an air-launched weapon. Developmental testing finished when the JSOW C-1 struck a small, fast-moving ship target during the weapon's second flight test.

"The JSOW C-1 is a network-enabled weapon which will be capable of receiving third party target updates in-flight and strike a precise point on a moving ship using its autonomous terminal seeker," said Cmdr Samuel Hanaki of the US Navy's Precision Strike Weapons programme office. "In addition to marking the completion of DT, this test keeps the programme on track for reaching initial operational capability in 2013."

JSOW is a family of low-cost, air-to-ground weapons that employs an integrated GPS-inertial navigation system and terminal imaging infrared seeker. JSOW C-1 adds moving maritime target capability and the two-way strike common weapon datalink to the combat-proven weapon.

JSOW C-1 is the world's first networked weapon, and has a range of more than 100 kilometres (more than 60 nautical miles). SP

Babcock tests AWD torpedo launcher

Testing of the assembled Mk32 Mod 9 torpedo launchers for the Hobart class air warfare destroyers is underway at Babcock's Techport Australia premises. The contract, awarded to Babcock Pty Ltd by Raytheon Australia in late 2008 on behalf of the Air Warfare Destroyer (AWD) Alliance, involves the adaptation of the system concept originally designed for the US Navy, with some elements of new design, assembly and test of a weapons launching system for use with the MU90 torpedoes for the AWD.

Babcock's international reach-back has been instrumental in facilitating supply, both in working with US government organisations to secure a licence in accordance with International Traffic in Arms Regulations (ITAR), and through its links with industry in the US and UK to source some specialist key components from proven suppliers. Babcock's local presence has seen some 80 per cent of the work undertaken in Australia (a significant increase on the contracted 63 per cent to be completed locally), including using its local supply chain for the manufacture, and undertaking testing at its Techport facility. All in-service support can be undertaken locally.

Two Mk32 Mod 9 torpedo launcher assemblies will be mounted in magazine compartments, port and starboard, on each of the three Hobart class AWDs. The system is made up of three main components; a launcher, an air charging panel and a torpedo loading tray. The air charging panel and loading tray have been designed by Babcock to meet the requirements of the AWD Alliance.

The ability of the Mk32 Mod9 torpedo launchers to fire a MU90 lightweight torpedo is now being proven in the current test phase, which is being carried out using a custom designed land-based test rig and measuring equipment and safe work procedures. SP

Harris to supply Falcon tactical communication systems to Jordan

Harris Corporation has received a $26.4 million order from the Kingdom of Jordan for Falcon III and Falcon II radios. These tactical radio systems will provide modernised tactical communication capabilities to the country's military.

Harris will deliver the radios to serve as the communications core of a modernised system for command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR).

"Jordan's military will be deploying this C4ISR system as part of a range of security missions," said Brendan O'Connell, President, Department of Defense Business, Harris RF Communications. "Harris is providing state-of-the-art tactical communications solutions that enable Jordan military personnel to maintain secure communications in the most demanding of environments on the battlefield." SP

DRDO tests interceptor missile

The Defence Research Development Organisation (DRDO) conducted a successful test launch of the interceptor missile. DRDO's air defence missile AAD-05 successfully hit the ballistic missile and destroyed it at a height of 15 kms off the coast of Orissa near the Wheelers Island.

A modified Prithvi missile mimicking the ballistic missile was launched from ITR Chandipur. Radars located at different locations tracked the incoming ballistic missile.

The onboard radio frequency seeker identified the target missile, guided the AAD-05 interceptor missile close to the target missile, hit the target missile directly and destroyed it. Warhead also exploded and destroyed the target missile into pieces. India is the fifth nation to have these ballistic missile defence capabilities in the world. SP

PHOTOGRAPHS: Raytheon, Harris, PIB

Ducommun test of US Army's advanced hypersonic weapon

Ducommun Incorporated has announced that its Miltec Corporation subsidiary was the industry team lead for the successful test flight of the US Army's unique advanced hypersonic weapon (AHW). The AHW is a first-of-its-kind glide vehicle, designed to fly long range within the earth's atmosphere at hypersonic speed. The US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) conducted the AHW boost-glide flight test on November 17, 2011. SP

US Navy to begin tests on electromagnetic railgun prototype launcher

The US Office of Naval Research's (ONR) Electromagnetic (EM) Railgun programme will take an important step forward in the coming weeks when the first industry railgun prototype launcher is tested at a facility in Dahlgren, Virginia.

"This is the next step toward a future tactical system that will be placed on board a ship someday," said Roger Ellis, Programme Manager of EM Railgun.

The EM Railgun launcher is a long-range weapon that fires projectiles using electricity instead of chemical propellants. Magnetic fields created by high electrical currents accelerate a sliding metal conductor, or armature, between two rails to launch projectiles at 4,500 miles per hour to 5,600 miles per hour.

With its increased velocity and extended range, the EM Railgun will give sailors a multi-mission capability, allowing them to conduct precise naval surface fire support, or land strikes; cruise missile and ballistic missile defence; and surface warfare to deter enemy vessels. Navy planners are targeting a 50- to 100-nautical mile initial capability with expansion up to 220 nautical miles.

The prototype demonstrator incorporates advanced composites and improved barrel life performance resulting from development efforts on the laboratory systems located at the Naval Research Laboratory (NRL) and NSWC-Dahlgren. The EM Railgun laboratory demonstrator based at NSWC-Dahlgren fired a world record setting 33-megajoule shot in December 2010.

BAE Systems and General Atomics also are commencing concept development work on the next-generation prototype EM Railgun capable of the desired firing rate. SP

Lockheed Martin awarded JIEDDO OPS services contract

Lockheed Martin, as prime contractor leading a consortium of five major defence contractors, has been awarded a follow-on contract with an estimated value of $980 million to continue work on the command, control, battle management and communications programme for the Missile Defense Agency. The contractors, known as the Missile Defense National Team, will continue development, operations and sustainment work.

Lockheed Martin has been competitively awarded one of five operations support (OPS) services indefinite delivery indefinite quantity (IDIQ) contracts from the US General Services Administration (GSA) Federal Systems Integration and Management Center (FEDSIM) in support of the Department of Defense's Joint Improvised Explosive Device Defeat Organization (JIEDDO). The anticipated period of performance is two years with three optional one year periods and an estimated cost ceiling of $900 million.

"Lockheed Martin is proud to continue our dedication to the JIEDDO mission, deploying highly-qualified personnel to serve as critical enablers for the warfighter's operations to identify and defeat the enemy networks employing IEDs against us and our Allies," said Bob Kramer, Lockheed Martin IS&GS-Defense Vice President for Operational Systems & Services. SP

DCNS launches shipbuilding programme for Russia

DCNS launched at the STX shipyards in Saint-Nazaire the industrial production of the first of two BPCs ordered by the Russian Federation. The construction of the first BPC for Russia started on February 1 in the presence of Andrei Petrovich Vernigora, Acting Director of Department of the Ministry of Defence of the Russian Federation, responsible for monitoring the execution of the military orders of the State, by Captain Valeri Pletnev, Naval Attaché, Embassy of the Russian Federation in France, and Ivan Goncharenko, First Deputy Director General of Rosoboronexport.

This study follows the detailed design of the ships, which began on November 1, 2011, to take into account specific Russian requirements. A Russian programme office was also inaugurated, which will monitor the work in the STX shipyard.

"DCNS and its partners are fully mobilised to carry out this programme," said Pierre Legros, Director of the Division of Naval Systems Surface DCNS. "This is the culmination of the common will of our two countries to develop a major industrial partnership."

The contract includes the supply to Russia of two Mistral class BPCs with associated services and benefits (initial logistics, training, technology transfer). The DCNS Group is prime contractor for the completion of both BPCs and will integrate the operations management system of the ship and system communications. STX France is involved in the contract as a subcontractor to DCNS, responsible for the construction of the ship platforms.

Delivery of the first ship is scheduled for 2014, three years after the entry into force of the contract. The second BPC will be delivered in 2015.

With a length of 199 metres, a displacement of 22,000 tonnes and a top speed exceeding 18 knots, the BPC is characterised by its large carrying capacity in terms of troops, equipment, heavy helicopters and landing craft, that it is capable of projecting throughout the world. It has electric propulsion pods, and its high level of automation reduces the crew to 170 people. It also has a hospital ward, and can carry out large-scale humanitarian missions. SP

Britain to buy extra C-17 aircraft

The British Prime Minister David Cameron has announced that the Ministry of Defence is to order an additional C-17 Globemaster, taking the number of aircraft in the RAF's fleet to eight.

Speaking in the House of Commons, Cameron said: "Because the Ministry of Defence's finances are better run and better managed, and because we have found savings, we will be able to purchase an additional C-17 for the RAF".

The purchase of an extra C-17 will help to support the airbridge which transports armed forces personnel and equipment between the UK and Afghanistan. The newest C-17 is currently being built by Boeing in the United States and is due to come off the production line next month. It is then expected to enter service with the RAF in July 2012.

The aircraft, which will cost £200 million, will be based at RAF Brize Norton in Oxfordshire along with the other aircraft in the fleet which are operated by 99 Squadron. The C-17 aircraft can fly over 4,500 nautical miles (8,300 km), meaning it can cover the distance between the UK and Helmand province in the one flight. SP

Boeing wins 10 C-17s Indian order

The Boeing Company, Long Beach, California, is being awarded a $1,781,413,723 firm-fixed-price contract for a modification in a foreign military sales (FMS) requirement for the Indian Air Force (IAF).

Ten C-17 aircraft will be procured for the IAF. The location of the performance is Long Beach. Work is expected to be completed by July 28, 2014. SP

IAI to supply fire control radar

Israel Aerospace Industries' (IAI) ELTA Systems will provide fire control radars (FCR) for installation onboard a foreign customer's fighter aircraft. After an evaluation process of several possible solutions, the customer selected the ELM-2032 FCR made by ELTA Systems Ltd., an IAI group and subsidiary. The customer awarded IAI a $150 million contract.

The modern ELM-2032 radar system implements advanced technologies that greatly enhance surveillance and fire control capabilities in air-to-air, air-to-ground and air-to-sea operation modes. The ELM-2032 is critical to the fighter aircraft's weapon system effectiveness and accuracy. It detects and tracks manoeuvring targets while employing advanced techniques to lock on the target.

The light-weight compact radar was developed while incorporating operational feedback of fighter pilots. The ELM-2032 sets very high performance standards with a competitive and attractive price. Modular hardware design, software control and a flexible avionic interface ensure that the radar can be installed in different fighter aircraft and can be customised to meet specific user requirements. SP

PHOTOGRAPHS: UK MoD, Airbus Military

Indonesia orders nine C295 transport aircraft

Airbus Military has recently signed a firm contract with PT Dirgantara Indonesia (PT DI) to supply nine C295 military transport aircraft for delivery to the Indonesian Ministry of Defence.

The contract between PT DI and the Ministry of Defence of Indonesia was signed simultaneously, witnessed by Minister of Defence, Prof. Dr Purnomo Yusgiantoro, and the Chief of Armed Forces Admiral Agus Suhartono, at a ceremony at the Singapore Airshow. The Indonesian designation of the aircraft will be CN295.

The aircraft will be operated by the Indonesian Air Force throughout the vast territory of Indonesia, which includes around 17,000

islands. The aircraft will perform a variety of roles including military, logistical, humanitarian and medical evacuation missions. The first delivery is foreseen in 2012 and by summer 2014 all aircraft will have been delivered.

Additionally, the industrial plan covers a substantial collaboration between PT DI and Airbus Military for the C295 programme, including the manufacturing of the tail empennage, rear fuselage and fuselage panels, as well as workpackages for the development of computer-based training systems and the creation of a service and delivery centre and a final assembly line (FAL) in Indonesia.

"This is a proud moment for our country as well as for the Indonesian aerospace industry. The C295 provides the ideal capacity to respond to Indonesia´s current and future military and humanitarian transport needs and does so very cost-efficiently. SP

OH-58 Kiowa Warrior helicopters achieve 2 million flight hour milestone

Bell Helicopter has announced that the US Army's OH-58 Kiowa Warrior helicopter fleet have accumulated 2 million flight hours. Over 7,50,000 of these flight hours have been flown in combat.

"The Kiowa Warrior continues to be the workhorse of army aviation and this recent milestone is another example of the important role this helicopter fulfills in the army's armed reconnaissance mission," said Mike Miller, Director of Army Business Development, Bell Helicopter.

With a mission capable rate of over 85 per cent, the highest in the army's deployed fleet, OH-58D lives up to its well-earned reputation as the "go to" helicopter for army operations. The mission capable rate is a critical component of a scout helicopter's role in supporting ground troops and performing its armed reconnaissance, command and control, targeting and defensive combat missions. SP

Lockheed Martin delivers 2,400th C-130 Hercules

Lockheed Martin's C-130 Hercules programme has reached yet another milestone with the delivery of its 2,400th aircraft. The aircraft is an MC-130J Combat Shadow II assigned to US Air Force Special Operations Command to be operated by the 27th Special Operations Wing at Cannon Air Force Base, New Mexico.

The delivery of this aircraft follows a record year for C-130J production at the company's facility in Marietta, Georgia. In 2011, 33 C-130J Super Hercules were delivered – a new production record for the C-130J model.

The C-130 production line in Marietta is the longest continuously operating military aircraft production line in history.

"As we start a new year it is only fitting that the C-130 breaks yet another record and sets a new milestone," said Lorraine Martin, Lockheed Martin Vice President for C-130 programmes. "The C-130 is the benchmark for airlift around the world and we look forward to this year being another year of excellence for our worldwide customers."

C-130J aircraft are currently in production for the US Air Force and Marine Corps, Iraq, Israel, Republic of Korea, Kuwait, Oman and Tunisia. C-130Js are also flown by Australia, Canada, Denmark, India, Italy, Norway, Qatar, the United Kingdom and the US Coast Guard. SP

PHOTOGRAPHS: Hawker Beechcraft, Boeing, USAF

Beechcraft AT-6 test fires laser-guided rockets

Hawker Beechcraft Defense Company (HBDC) recently announced its AT-6 Light Attack aircraft which has successfully employed laser-guided rockets during recent test sorties at Eglin Air Force Base in Florida. In January, the AT-6 became the very first fixed-wing aircraft to launch a laser-guided rocket. The weapons testing is part of the ongoing congressionally funded operational evaluation of the AT-6, executed by the Air National Guard and Air Reserve Command Test Center (AATC).

"This is a big milestone in the future of Hawker Beechcraft's Light Attack programme," said Derek Hess, HBDC Director, Light Attack. "We continue to see great interest in the AT-6 from military forces around the globe and the capability to employ laser-guided rockets is another reason why the aircraft is unmatched in the light attack aircraft market today."

The 2.75" laser-guided rocket testing included BAE Systems' advanced precision kill weapon system (APKWS) and Raytheon's TALON. The weapons were fired from approximately three nautical miles and guided to their targets using either an airborne laser from the AT-6 or a ground laser from the Eglin AFB range. Both rockets performed flawlessly and were scored as hits on their respective targets. SP

Cobham body fuel tanks selected for KC-46A

Boeing has selected Cobham mission equipment to provide body fuel tanks in support of the US Air Force's KC-46 Tanker programme. Cobham revealed its selection in a January 30, 2012 company statement.

Boeing is providing the US Air Force with 179 KC-46A Tankers initially, under an engineering manufacturing development (EMD) phase that began in January 2012, with low-rate and full-rate production through 2028. Under the Cobham agreement, each aircraft will carry a quantity of four each of the Cobham body fuel tanks.

According to Cobham, the tanks enable KC-46A mission capability by providing additional fuel for offload and increased range. SP

IAF keen on inducting more drones

The Indian Air Force (IAF) plans to induct more unmanned aerial vehicles (UAVs) in its fleet for surveillance and reconnaissance on the borders as an effective weapon for deterrence, a senior official said.

"We are ready to induct more drones in view of their capability to perform specific tasks on borders. There is a team in Delhi which is studying our present and future requirements," said IAF Training Command chief Air Marshal Dhiraj Kukreja.

The IAF flies the Israeli-made Searcher II and Heron for reconnaissance and surveillance purposes. About 100 Searchers are in operation on Indian borders in western, northern and eastern regions. The air force also operates Lakshya as a towed aerial sub-target for live fire training. SP

PHOTOGRAPH: SP Guide Pubns

IAI developing C²Strike

Israel Aerospace Industries (IAI) is finalising development of C²Strike – a command, communication, surveillance and strike integrated system designated for tactical use and based on the Panther UAS special capabilities. C²Strike system opens new and ground-breaking capabilities for the tactical manoeuvring force in defence and strike missions.

Panther's automatic vertical take-off and landing (AVTOL) capabilities, and its hovering and transitioning to straight & level flight, were recently demonstrated to certain IAI customers. The Panther, having E/O surveillance and laser designation payloads, provides a unique solution for the tactical tier.

Until now, observation capability by UAS and precise fire support were not readily available at the tactical level. Weapon accuracy and effectiveness was limited, and small forces – terrorists, hiding anti-tank squads, etc., could block an armoured manoeuvre. The challenge in such battlefield scenarios is to locate and strike low-signature and time sensitive targets, swiftly and accurately. There is an ongoing worldwide need for such a solution.

IAI's total connectivity solution is implemented in the C²Strike system to enable real time data transfer. An integrated network between airborne surveillance systems, control systems and precision strike systems creates a united operational system-of-systems. Fast, accurate and independent identification, location, designation, launch and strike of targets is achieved.

The Panther UAS' multi-sensor payload consists of a day-night designation system. The UAS is operated by a commander, an operator and a technician, that move with the mobile forces in the mobile mission station (MMS). Each MMS carries more than one Panther UAS, for full support, backup and hot swap between mission and transit UAS.

The system uses video geo-registration technology for accurate target coordinates location.

Various IAI's weapon systems are integrated with C²Strike, for example: the LAHAT laser guided missile, equipped with advanced guidance capabilities and unique warheads, with a range of 8 km; the TopGun GPS/INS guided missile, capable of mid-course target changing for accurate strike and guided-artillery allocation. Integration of other weapon systems is possible per customer's specific requirements.

A ground communication system connects the MMS vehicle and the strike weapon systems. The C²Strike system extracts accurate target coordinates and provides a real-time broad situation picture to the commander, who is in full situational-awareness, and assigns munition allocations accordingly. All communications are secure as required. The customer's own network can be used for communication. To further enhance the communication system's capabilities, the Panther UAS could also be used as a relay. IAI's ETOP hovering observation platform could also be integrated with the system, according to the required operational range and battlefield characteristics. SP

IAI UAS Academy – training solution for UAS operators

Israel Aerospace Industries (IAI) has established IAI UAS (unmanned aerial system) Academy – a unique solution for training and certification of UAS operators and technicians. The UAS Academy is based on IAI's vast knowledge and experience of four decades in designing, manufacturing and operating UAS, as well as training UAS technicians and operators.

In addition to providing a variety of training services to IAI customers within IAI premises and in other planned locations, the UAS academy redefines the training concept. It provides solutions to the growing need for trained and skilled UAS operation, maintenance and mission crews in various military, paramilitary and civilian facilities. SP

UAVs lead Northrop's display at Singapore Airshow

Northrop Grumman Corporation highlighted a wide range of its global security capabilities and programmes at the Singapore Airshow, including airborne early warning and control systems, unmanned aircraft systems (UAS), fire control radars and infrared countermeasures.

"Our customer base across South East Asia is extremely important to us. Singapore is a key market, one in which we have considerable capabilities and a wide range of products to offer," said Bill Schaefer, Sector Vice President of business development for the company's Aerospace Systems sector. "Northrop Grumman's technology leadership and proven capability in many areas,

including airborne early warning and control and aerial surveillance, are well matched to meeting the region's growing defence and security needs."

The company featured its family of Q-4 high altitude long endurance aircraft such as the MQ-4C broad area maritime surveillance unmanned aircraft system (BAMS UAS), and E-2D advanced Hawkeye.

Based on the combat-proven RQ-4 Global Hawk UAS, the BAMS UAS is a versatile maritime intelligence, surveillance and reconnaissance system to support a variety of missions while operating independently or in direct collaboration with fleet assets. When operational, BAMS will play a key role in providing commanders with a persistent, reliable picture of surface threats, covering vast areas of open ocean and littoral regions, significantly augmenting the use of other manned assets to execute surveillance and reconnaissance tasks. SP

PHOTOGRAPHS: GA-ASI, Northrop Grumman

Second Avenger UAV makes first flight

General Atomics Aeronautical Systems, Inc. (GA-ASI), a leading manufacturer of unmanned aircraft systems (UAS), tactical reconnaissance radars, and electro-optic surveillance systems, announced the successful flight of a second multi-mission jet-powered Predator C Avenger aircraft.

"The first flight of our second Avenger aircraft is a significant achievement as it refines the first prototype design to an operational capability," said Frank Pace, President, Aircraft Systems Group, GA-ASI. "Avenger provides the right capabilities for the right cost at the right time and is operationally ready today. This aircraft offers unique advantages in terms of performance, cost, timescale, and adaptability that are unmatched by any other UAS in its class."

The first flight of the second aircraft in the Avenger fleet occurred on January 12 at the company's Gray Butte Flight Operations Facility in Palmdale, California. Tail 2 met all performance objectives in its first flight. The aircraft features a longer fuselage than the first Avenger aircraft – increased by four feet to accommodate larger payloads and fuel. Avenger can carry up to 3,500 lb internally and its wing hard points are capable of carrying weapons ranging from the 500 lb class to the 2,000 lb class.

Production of a third and fourth UAS in the Avenger series is also underway, with Tail 3 expected to fly by late summer and Tail 4 by early next year.

With avionics based upon the battle-proven Predator B/MQ-9 Reaper, Avenger is designed to perform high-speed, long-endurance, multi-mission intelligence, surveillance, and reconnaissance (ISR) and precision-strike missions over land or sea. The aircraft has a 44-foot long fuselage, a 66-foot wingspan, is capable of flying at over 400 KTAS, and has an endurance of over 16 hours. Avenger can support a wide array of sensors and weapons loads and has been designed to carry an all-weather GA-ASI Lynx multi-mode radar, an electro-optical/ infrared (EO/IR) sensor, and a 2,000 lb joint direct attack munition (JDAM), delivering an optimal balance of long loiter ISR and precision-strike capability. SP

Thales enhances maritime border surveillance offer

Thales has reinforced its coastal and maritime border surveillance offer thanks to the FULMAR maritime surveillance and identification UAV system from the Spanish firm Aerovisión.

This new solution, with its comprehensive integration of sensors, C2 (command & control) system and secure communication networks, reinforces the operational efficiency of the coastguard and customs services.

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

BAE Systems to work with French on Mantis Drone

Britain and France are expected to sign a deal to develop a high-tech unmanned aircraft based on the top-secret Mantis project developed by BAE Systems in Lancashire.

The plane, capable of striking from high altitudes after travelling huge distances, will be designed by BAE and Dassault Aviation.

The long-awaited £1 billion Mantis deal is seen as being highly significant. Not only will it be the first fruits of the Franco-British Treaty on Defence Cooperation signed early last year, it also virtually confirms that manned fighter aircraft such as the Typhoon will be superseded within a few decades. SP

Elbit launches hyperspectral payload, fitted for Hermes

Elbit Systems has expanded its portfolio of payloads with the recent launch of a Hermes 450 and Hermes 900 unmanned air system (UAS) hyperspectral payload with new revolutionary intelligence capabilities.

Based on Elbit Systems Electro-Optics Elop's proprietary research, the unique, innovative hyperspectral imaging technology enables simultaneous imaging of the region of interest at different wavelengths. The unique payload is capable of imaging the spectral signature of the imaged materials, which is unique to every material in nature, just like a fingerprint. Using a very sensitive imaging technology, the system can perform remote sensing at an extremely high resolution. The innovative hyperspectral technology introduces a new, additional dimension to the world of intelligence gathering, by enabling detection and tracking of targets on the basis of their material signature. The new payload enables intelligence gathering via identification, measurement and tracking of materials and objects including uncovering low signature military activity and invisible obstacles, as well as identification of hazardous materials. SP

3 Idiots UAV for counter-insurgency operations

Netra, the drone which featured in the Hindi film *3 Idiots* has been officially inducted into the paramilitary forces - the Border Security Force (BSF) and the Central Reserve Police Force (CRPF).

'Netra' was developed by Ideaforge Technology, a company floated by a group of Indian Institute of Technology (IIT)-Mumbai alumni, and the Pune-based Research and Development Establishment (Engineers) laboratory of the Defence Research and Development Organisation (DRDO).

It is designed specifically for anti-terrorist and counter-insurgency operations in forested areas. Netra is light-weight (1.5 kg) and portable, constructed using carbon fibre composites, allowing a user to carry the system along with the control station to field locations. Each unit costs around ₹15-20 lakh. SP

PHOTOGRAPH: Anoop Kamath

Dhaksha UAV test by team MIT India

MIT, Anna University, Department of Aerospace Engineering's Division of Avionics successfully tested the Dhaksha- mini unmanned aircraft system (UAS) which will provide the public safety and rescue operations with real-time video and stable, high-resolution imagery.

Dr K. Senthil Kumar, Project Director, Mini UAV, said that the short-range tactical rotorcraft system can be made available immediately when first responders need it. Dhaksha's compact size fits in the small case or a car and is easy to launch and recover in almost any harsh environment. Dhaksha is highly tolerant of sustained winds and wind gusts, thereby achieving stable aerial imagery through an advanced onboard control system.

"Dhaksha will help first responders locate and identify natural and human public safety threats, keeping people out of harm's way," said Dr S. Thamarai Selvi, Dean MIT. It speeds and manoeuvres at the touch of a button. Operator training and workload is minimised through a streamlined design and user interface. Video imagery is transmitted to the handheld ground control station and distributed to decision makers for real-time viewing.

One person can carry and operate a complete system reliably and safely in adverse weather conditions, providing instant imagery anytime an aerial vantage point is needed. The rotorcraft weighs less than 4 kg, hovers quietly overhead for more than 40 minutes and can patrol at speeds up to 60 kmph. The operator uses a small portable control unit to command it to hover or fly in any direction at varying speeds.

Anna University partially funded the demonstration that took place recently and representatives from the ADE, DRDO, NAL and professors also participated. This platform has been developed by the research students team led by A. Mohammed Rasheed and A. Kaviyarasu. SP

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NCTC or inflated MAC?

After 22 months of excruciating delay, the National Counter Terrorism Centre (NCTC) was finally approved by the government. The 26/11 terrorist strikes in Mumbai revealed deficiencies in our counter-terrorism architecture in terms of inadequate intelligence and lack of coordinated follow-up action even on the intelligence that was available. In fact, the responsibility for follow-up action on available intelligence was found to be diffused.

The NCTC is to start functioning from March 1, 2012, but for it to become of worthwhile real-time operational use, it will require a couple of months, if not years. The fact that the NCTC will subsume the Multi Agency Centre (MAC) implies that in real terms the NCTC will build upon the core of the MAC.

The MAC of the Intelligence Bureau has been dealing with terror-related inputs till now. The NCTC is to coordinate with all intelligence and security agencies, getting terror related inputs, collating them and optimising this intelligence for use against terror threats. However, the National Investigation Agency (NIA), the main central agency to investigate terror related cases, is to continue functioning 'independently'.

NCTC will be the yet another new major anti-terror set up after NIA and the National Intelligence Grid (NATGRID). NATGRID, approved by the union cabinet in June last year too will work separately albeit provide inputs to the NCTC. The million-dollar question is how much of a difference will the NCTC make considering the shape it is to come up? The belief that it might not go beyond an inflated MAC may well be true despite the fanciful name akin to the US NCTC at Washington, D.C.

While mooting the proposal, the Home Minister's ideas differed from the counter-terrorism architecture created in the US, in that while in the US, the Director National Intelligence oversees the functioning of the NCTC, the Home Minister wanted that the entire counter-terrorism architecture, including the proposed NCTC, should function under the Home Minister till his idea of creating a Ministry of Internal Security was accepted and implemented. There was considerable merit in what the Home Minister was proposing – creating a Ministry of Internal Security akin to the Ministry of Home Land Security in the US. If this was being proposed by the Home Minister himself, it was obviously taking into account difficulties in coping with counter-terrorism holistically in the current avatar of the Ministry of Home Affairs including handling the nine major intelligence agencies, all of which do not follow the same command and control channel. Had the proposal of the Home Minister been accepted in totality, the national focus could have well shifted from investigation/post-investigation of terrorist acts to prevention of terrorist acts, which is the need of the hour. However, the proposal got diluted in the tussle between the sphere of responsibilities of the National Security Advisor and the Home Minister. Political fear of letting the Minister of Home Affairs Minister of Internal Security become 'too strong' would have also contributed towards such dilution – the same imaginative fear that prevents them from appointing a Chief of Defence Staff despite being strongly advocated by the Kargil Review Committee and the Group of Ministers.

Resultantly, the NCTC is going to come up as a cross-breed with the NIA, NATGRID, etc. functioning independently, permitting full interplay of the Indian crabs in pulling down each other in the familiar game of one-upmanship. Notwithstanding this, the NCTC in the proposed shape too can only be optimised if state counter-terrorism centres are established in all states and connected for real-time passage of intelligence both ways. SP

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

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ILLUSTRATION: Anoop Kamath

SAARC countries strengthening anti-terror mechanism

A meeting of high level group of experts from SAARC countries to strengthen anti-terror mechanism was held in New Delhi recently. The two-day meeting was attended by delegates from Bhutan, India, Afghanistan, Nepal, Sri Lanka and the SAARC Secretariat. Indian delegation was led by Nehchal Sandhu, Director, Intelligence Bureau.

Issues relating to further improving the functioning of SAARC terrorist offences monitoring desk (STOMD) and the SAARC drug offences monitoring desk (SDOMD) based in Colombo, Sri Lanka; review of the enabling legislation enacted by the member states on SAARC Regional Convention on Suppression of Terrorism and its additional protocol as well as the SAARC Convention on Narcotic Drugs and Psychotropic Substances and to further enhance the implementation process of these conventions by the member states were discussed. The meeting considered the SAARC convention on Mutual Assistance in Criminal Matters as well.

Exchange of information among the member states on a real-time basis for better coordination to counter-terrorism and drug-related activities, developing cooperation, capacity and relationship building among the SAARC police authorities were identified, among others, as possible methods of strengthening the SAARC anti-terrorism mechanism. SP

Thales awarded contract for Canadian Coast Guard's flight following system

Thales Canada announced that it has been awarded a contract by the Canadian Coast Guard (CCG) for a flight following system (FFS) to provide improved helicopter tracking. The project includes installing flight following equipment in 22 helicopters, plus 17 helicopter-capable ships.

"This FFS project further reinforces our position as a premier electronic systems integrator for the Canadian Coast Guard," said Paul Kahn, President and CEO Thales Canada. "This follows on from our recent win of another contract that has potential for technical synergies, to deliver the Interdepartmental Maritime Integrated Command, Control and Communications (IMIC3) project, a joint effort of the Department of National Defence and the Canadian Coast Guard. We look forward to further improving the overall Canadian Coast Guard maritime safety and situational awareness."

Thales Canada will be working in partnership with SkyTrac, a Canadian company, globally respected as a specialised supplier of hardware and software for satellite-based flight following systems. "SkyTrac Systems is thrilled to work with a first-rate organisation like Thales," commented SkyTrac President and CEO Steve Fuhr. "Together we will provide the CCG with unparalleled situational awareness on all their participating resources. This technology has the ability to take an organisation's operational safety and efficiency to the next level."

The FFS project has four main components: helicopter tracking: aviation tracking units installed in helicopters (i.e. helicopter-to-ship-to-helicopter bearing and distance information which replaces the existing NavLink capability); vessel tracking (VT): Units installed in helicopter-capable vessels; Satcom: A satellite communications service and shore component: data centre services. SP

UK collects biometric data of Olympic athletes

According to *The Independent*, in an effort to prevent terrorists or illegal immigrants from sneaking into the country, UK officials are collecting biometric data from more than 10,000 Olympic athletes and their coaches. Over the next several weeks UK Border Agency staff deployed overseas, will collect as much biometric information as they can, travelling to major international sporting events.

A total of 20,000 accredited athletes, coaches, media personnel, and family members is expected to attend the games, but roughly half of these individuals already have their biometric information stored on their passports, so do not need to have their finger and face prints collected. Officials are going through such lengths as those with accredited passes may enter the Olympic Villages and venues without tough security checks, so security officials are doing their due diligence ahead of the event as a precautionary measure. "Collecting biometrics in advance of travel will increase security as GFM [games family members] biometrics will be prechecked before arrival in the UK," said a spokesman for the Home Office.

International athletes do not have to have their 10 fingerprints and face print taken in their own countries, but they will have to provide their biometrics upon arrival in the United Kingdom. To help minimise any delays, a temporary terminal at Heathrow airport is being built to accommodate the 20,000 accredited visitors. SP

PHOTOGRAPH: PIB

Japan orders Northrop Grumman's airborne laser mine detection systems

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

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

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

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

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

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

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

US Secret Service investigates cell phone cloning scheme

On February 1, the US Attorney for the Southern District of New York announced charges against 12 defendants for participating in a $250 million cell phone cloning scheme. US Secret Service's New York Field Office recently investigated a sophisticated operation in which information from the cell phone accounts of tens of thousands of people is stolen to support a black market in international calling.

"These charges show our commitment to protecting the privacy of consumers and safeguarding the integrity of international telecommunications networks," said Manhattan US Attorney Preet Bharara.

The Secret Service is recognised worldwide for its investigative expertise and for its aggressive and innovative approach to the detection, investigation and prevention of financial crimes. While payment methods have changed over the years – from coin and paper currency, to checks, credit cards, and now, online transactions – the Secret Service remains committed to safeguarding the payment and financial systems of the United States.

"Through the use of strong investigative techniques and practices, the Secret Service and its law enforcement partners in multiple jurisdictions successfully thwarted further criminal activity and brought these perpetrators to justice," said Brian Parr, Special Agent in Charge of the Secret Service's New York Field Office.

Each of the 12 defendants is charged with one count of conspiracy to commit wire fraud, which carries a maximum penalty of 20 years in prison, and aggravated identity theft, which carries a mandatory minimum penalty of two years in prison. SP

PHOTOGRAPHS: Northrop Grumman, US Department of Homeland Security

US Administration's cybersecurity legislative proposal

Today, we are more interconnected than ever before—in an instant, we can communicate with a friend on the other side of the world, shop online and research any topic. These global networks are critical to our economy, allowing us to communicate, travel, and power our homes.

But this increased interconnectivity also presents an increased risk of theft, fraud, and abuse to which no country, industry, community, or individual is immune. The Department of Homeland Security (DHS) is committed to ensuring that cyberspace is safe and secure, enables innovation and prosperity, and protects privacy and civil liberties. Together with public and private sector partners, we are working to build a safe, secure cyberspace where the American way of life can thrive.

To that end, DHS's cybersecurity mission is twofold: first, we work with the private sector, states, and municipalities to support the cybersecurity efforts of critical infrastructure owners and operators. Second, we are responsible for securing networks for federal civilian departments and agencies – the .gov domain.

President Obama has proposed legislation that would give us the tools to execute our cybersecurity mission more effectively. This legislative proposal focuses on clarifying authorities, collaborating with the private sector, and driving measurable progress and outcomes.

The President's proposal would establish national standards, protect federal networks, and allow DHS to provide enhanced voluntary assistance to our private sector and state, local, tribal and territorial government partners. At the same time, it includes important safeguards to protect the privacy and civil liberties of the American public.

Over the coming weeks, we will discuss in this proposal in greater detail, and highlight more of the work we are already doing every day to secure cyberspace. Cybersecurity is a shared responsibility in which all players have a role to play – government, private sector and individuals. By making it easier to work together, we will better be able to protect cyberspace and the critical infrastructure upon which we all rely. SP

India's multi-layered cybersecurity plan

The government is working out a comprehensive plan to strengthen its cyber security capabilities. The government is looking at a multi-layered system to step up protection levels and to put in place real-time command and control centres.

According to newspaper reports, among the proposals are dedicated command-and-control centres to monitor critical infrastructure real time, and computer emergency response teams for key sectors such as power, and elaborate protocols for all involved. The National Security Advisor (NSA) is working on the proposal.

On top of this plan is a clear delineation of responsibilities between CERT-IN (Computer Emergency Response Team-India), NTRO (National Technical Research Organisation), Intelligence Bureau, Military Intelligence and other agencies that have a role in fighting cyber intrusions. Even where there are overlaps, protocol will be laid out. The proposed protocol will also cover department of telecom, department of information technology, National Informatics Centre, etc.

Under the proposal, the government will also regularly and proactively monitor and scan critical networks. Not just that, the levels of security for these networks will also be stepped up. SP

Privacy and data theft increase

Privacy and data theft will be the top security issues that organisations need to focus on in the new year, according to PandaLabs, the anti-malware laboratory of cloud security firm Panda Security.

Cyber-espionage and social networking attacks aimed at companies and government agencies will be the predominant threat to safeguard against in 2012, it said in a statement.

"Cyber-espionage and social networking attacks will be the trends to watch, together with other, more traditional threats," the company said.

According to PandaLabs Technical Director Luis Corrons, "We live in a world where all information is in digital form, so modern-day spies no longer need to infiltrate a building to steal information." SP

Symantec announces intelligent information governance to mitigate risks

Symantec Corp. announced an intelligent information governance solution that allows organisations to bridge the gap between business, legal and IT, reduce their risks and costs, and empower employees to work freely in a connected world. In order to enable organisations to better protect their information, establish retention policies and streamline their eDiscovery process, Symantec announced its plans for increased integration between its leading storage and eDiscovery offerings.

Additionally, Symantec announced that it has acquired LiveOffice, a privately-held cloud-based archiving leader, for a purchase price of approximately $115 million. The acquisition will extend Symantec's intelligent information governance offering to the cloud, providing customers choice between on-premise, cloud or hybrid delivery of Symantec solutions. SP

PHOTOGRAPH: www.xmdr.org

DARPA's legged squad support system to lighten troops' load

Today's dismounted warfighter can be saddled with more than 100 pounds of gear, resulting in physical strain, fatigue and degraded performance. Reducing the load on dismounted warfighters has become a major point of emphasis for defence research and development, because the increasing weight of individual equipment has a negative impact on warfighter readiness. The Army has identified physical overburden as one of its top five science and technology challenges. To help alleviate physical weight on troops, DARPA is developing a highly mobile, semi-autonomous legged robot, the Legged Squad Support System (LS3), to integrate with a squad of Marines or Soldiers.

Recently the LS3 prototype underwent its first outdoor exercise, demonstrating the ability to follow a person using its "eyes"—sensors that allow the robot to distinguish between trees, rocks, terrain obstacles and people. Over the course of the next 18 months, DARPA plans to complete development of and refine key capabilities to ensure LS3 is able to support dismounted squads of warfighters.

Features to be tested and validated include the ability to carry 400 lbs on a 32-km trek in 24-hours without being refuelled, and refinement of LS3's vision sensors to track a specific individual or object, observe obstacles in its path and to autonomously make course corrections as needed. Also planned is the addition of "hearing" technology, enabling squad members to speak commands to LS3 such as "stop," "sit" or "come here." The robot also serves as a mobile auxiliary power source— troops may recharge batteries for radios and handheld devices while on patrol.

DARPA seeks to demonstrate that an LS3 can carry a considerable load from dismounted squad members, follow them through rugged terrain and interact with them in a natural way, similar to the way a trained animal and its handler interact.

"If successful, this could provide real value to a squad while addressing the military's concern for unburdening troops," said Army Lt. Col. Joe Hitt, DARPA programme manager. "LS3 seeks to have the responsiveness of a trained animal and the carrying capacity of a mule." SP

DARPA to develop mobile millimetre-wave backhaul networks

Providing high-bandwidth communications for troops in remote forward operating locations is not only critical but also challenging because a reliable infrastructure optimised for remote geographic areas does not exist. When you introduce additional needs, such as communication support for data feeds from unmanned aerial vehicles (UAVs) transmitting information to troops on patrol in remote areas, you face a host of new challenges where dropped signals can create a serious threat to a warfighter's situational awareness.

DARPA's recently announced fixed wireless at a distance, programme seeks to tackle the problem of stationary infrastructure designed specifically to overcome the challenge inherent with cell communication in remote areas.

To overcome the challenge of data transmission in remote areas outside forward operating locations, the Agency's mobile hotspots programme intends to develop and demonstrate a scalable, mobile, millimetre-wave communications backbone with the capacity and range needed to connect dismounted warfighters with forward-operating bases (FOBs), tactical operations centres (TOCs), intelligence, surveillance and reconnaissance (ISR) assets, and fixed communications infrastructure. The backbone should also provide reliable end-to-end data delivery among the hotspots, as well as from ISR sources and command centers to the hotspot users. In essence, mobile hotspots seeks to provide cell-tower-class performance without the infrastructure.

The programme envisions air, mobile and fixed assets, most of which are organic to the deployed unit, that provide a gigabit-per-second tactical backbone network extending to the lowest-echelon warfighters. To achieve this, the programme seeks to develop advanced pointing, acquisition and tracking (PAT) technologies, not commercially available, needed to provide high connectivity to the forward-located mobile hotspots. Advanced PAT technology is key for connectivity to small UAVs, for example, enabling them to serve as flying nodes on the mobile high-speed backbone.

"While some advanced commercial millimetre-wave components can be leveraged for this programme, the technical challenge is more complex given the infrastructure and terrain challenges of a forward-operating locations," said Dick Ridgway, DARPA programme manager. "Mobile hotspots will require the development of steerable antennas, efficient millimetre-wave power amplifiers, and dynamic networking to establish and maintain the mobile data backhaul network. We anticipate using commercial radio protocols, such as WiFi, WiMax or LTE long term evolution, as a cost-effective demonstration of the high-capacity backbone. However, the millimetre-wave mobile backbone developed during this programme will be compatible with other military radios and protocols." SP

PHOTOGRAPH: Darpa

Raytheon acquires Pikewerks

Raytheon Company has acquired Pikewerks Corporation, a privately held company, to further extend Raytheon's capabilities to defend against sophisticated cybersecurity threats facing customers in the intelligence community, departments of defence and commercial organisations. Terms of the transaction were not disclosed. The transaction will not materially impact Raytheon's total company sales or earnings per share for the fourth quarter of 2011 or fiscal year 2012.

Pikewerks enhances Raytheon's comprehensive cybersecurity offerings, including a range of analysis and investigation capabilities with particular emphasis on insider threat protection, software protection and forensics. Two high-demand Pikewerks products are Electronic Armor, an anti-exploitation software tool that protects executable files; and Second Look®, a software capability for live, in-memory forensic analysis of operating systems. Pikewerks brings one of the industry's largest repositories of kernel-level engineering talent on the Linux operating system. SP

L-3 acquires Kollmorgen Electro-Optical

L-3 Communications has completed the acquisition of the Kollmorgen Electro-Optical unit of Danaher Corporation. The acquired business will conduct business under the name of L-3 KEO.

The company paid $210 million, subject to certain contractual adjustments to the purchase price. L-3 KEO develops and manufactures specialised equipment, including submarine photonics systems and periscopes, ship fire control systems, visual landing aids, ground electro-optical and sensor-cueing systems and is headquartered in Northampton. SP

Embraer increases stake in Portugal's OGMA

Embraer Defense and Security has signed an agreement to acquire 30 per cent of the shares representing the capital of Airholding SGPS, S.A., from the European Aeronautic Defense and Space Company (EADS).

Airholding is a consortium formed in 2005 by Embraer and EADS, incorporated in Portugal with the specific purpose of holding a 65 per cent stake in OGMA. With this new agreement, Embraer takes full control over AIRHOLDING stake, while the Portuguese Government holds the remaining 35 per cent share through EMPORDEF – Portuguese Defense Company.

"This is an additional investment in Portugal, in order to strengthen the strategic partnership between Brazil and the European Union", said Luiz Carlos Aguiar, President of Embraer Defense and Security. OGMA provides maintenance and repair for military and civilian aircraft, engines and components, as well as manufacturing and assembly of aircraft structures. SP

NIITEK and MBDA Italia proceed into a collaboration agreement

NIITEK, Inc., a subsidiary of the Chemring Group PLC, has entered into a collaboration agreement with MBDA Italia. NIITEK will provide multiple ground penetrating radar (GPR) kits, integration and training services in support of the Italian army route clearance package counter-IED programme. The GPR kits will be integrated onto MBDA's vehicle pushed detection trailers. Deliveries under the agreement will be made over a 12-month period.

"We are delighted that MBDA has chosen NIITEK's battle proven GPR to produce a multifaceted detection capability for the Italian MoD," said Juan Navarro, President of NIITEK. "This integration will provide an enhanced suite of sensors to soldiers in support of the route clearance mission. We look forward to contributing our GPR fielding expertise in support of MBDA's success in this endeavour."

MBDA is the only group capable of designing and producing missiles and missile systems that correspond to the full range of current and future operational needs of the three armed forces (land, sea and air). In total, the group offers a range of 45 missile systems and countermeasures products already in operational service and more than 15 others currently in development. MBDA is jointly held by BAE Systems (37.5 per cent), EADS (37.5 per cent) and Finmeccanica (25 per cent). SP

SECURITY EVENTS

International Armoured Vehicles 2012
20–23 February
FIVE, Farnborough, UK
www.iqpc.com/Event.aspx?id=518778

Defence & Security 2012
5–8 March
Impact Exhibition Centre
Bangkok
Thailand
http://www.asiandefense.com/

Military Cyber Security Conference
7–9 March
Arlington, Virginia, United States
http://www.militarycybersecurity.com/

Soldier Modernisation Asia 2012
12–15 March
Singapore, Singapore
http://www.soldiermodasia.com

Iraq Defence & Security Summit 2012
24–25 March
Erbil Rotana Hotel, Erbil, Kurdistan, Iraq
www.iraqstability.org/aboutsummit.aspx

Defexpo India 2012
29 March - 1 April
Pragati Maidan
New Delhi, India
www.defexpoindia.in

Info Security Europe 2012
24–26 April
Earls Court
London, UK
http://www.infosec.co.uk/

Charming double agent

Eddie Chapman was a charming criminal, a con man, and a philanderer. He was also one of the most remarkable double agents Britain has ever produced. Inside the traitor was a man of loyalty; inside the villain was a hero. The problem for Chapman, his spymasters, and his lovers was to know where one persona ended and the other began.

In 1941, after training as a German spy in occupied France, Chapman was parachuted into Britain with a revolver, a wireless, and a cyanide pill, with orders from the Abwehr to blow up an airplane factory. Instead, he contacted MI5, the British Secret Service. For the next four years, Chapman worked as a double agent, a lone British spy at the heart of the German Secret Service who at one time volunteered to assassinate Hitler for his countrymen. Crisscrossing Europe under different names, all the while weaving plans, spreading disinformation, and, miraculously keeping his stories straight under intense interrogation, he even managed to gain some profit and seduce beautiful women along the way. SP

Facebook lands him in 'custody'

The New Zealand police made their first Facebook arrest recently when they rounded up 21-year-old Michael James Ede. The Queenstown police tracked down Michael who had allegedly tried to burgle a local pub by posting security-camera shots of himself on Facebook.

According to reports, he was opening the safe for nearly an hour and when his mask got overheated, he removed it. He stole a glance at the camera and investigators put the image on the department's Facebook profile. Some web users recognised Michael and lo he ended up in custody. He pleaded guilty and was sentenced to 300 hours of community service besides a fine of $125. SP

Iraqi stowaway arrives in New Jersey

PHOTOGRAPHS: Wikipedia

Asem Haroon arrived in New Jersey as a stowaway on an Italian freighter and spent two weeks last year in a warehouse before he was discovered.

Republican Peter King, Chair of the House Homeland Security Committee, said: "This is very alarming and it's very serious that someone could stowaway and get off the ship in a secure area of the port and then go to another part of the port and live in a building. Just think if he had been a terrorist and had any type of explosive device, what he would have been capable of doing."

It's not really clear just yet who exactly 26-year-old Asem Haroon is. He originally told authorities that he's Iraqi and fought as an insurgent against US soldiers in Fallujah. A bit of digging, though, indicated he's really Egyptian—although he has no known ties to the Taliban or Al Qaeda. SP

Watergate break-in office building sold

District developer Penzance Cos. closed recently on its $76 million purchase of the Watergate office building and the sixth floor suite where the Watergate break-in took place. The infamous break-in led to President Richard M. Nixon's resignation.

The office housed the Democratic National Headquarters when it was burglarised in 1972. At the time the office faced a Howard Johnson motel, where a lookout for the burglars rented a room to keep watch. SP

Bugs get through superannuation fund

Well-known Australian information security professional Patrick Webster has been visited by NSW Police officers following his disclosure of an embarrassing Web application security bug to his superannuation fund.

Webster had noticed his pension fund, First State Superannuation allowed logged in members to access online statements via "direct object reference," a security lapse so boneheaded it is included in OWASP's infamous top ten list of web application security bugs.

For those unfamiliar with direct object reference, it means documents are served up by way of a direct ID in a URL. The problem is that by changing the document ID in the browser's URL bar, another document will be accessed and served to the user. SP

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