

फरवरी

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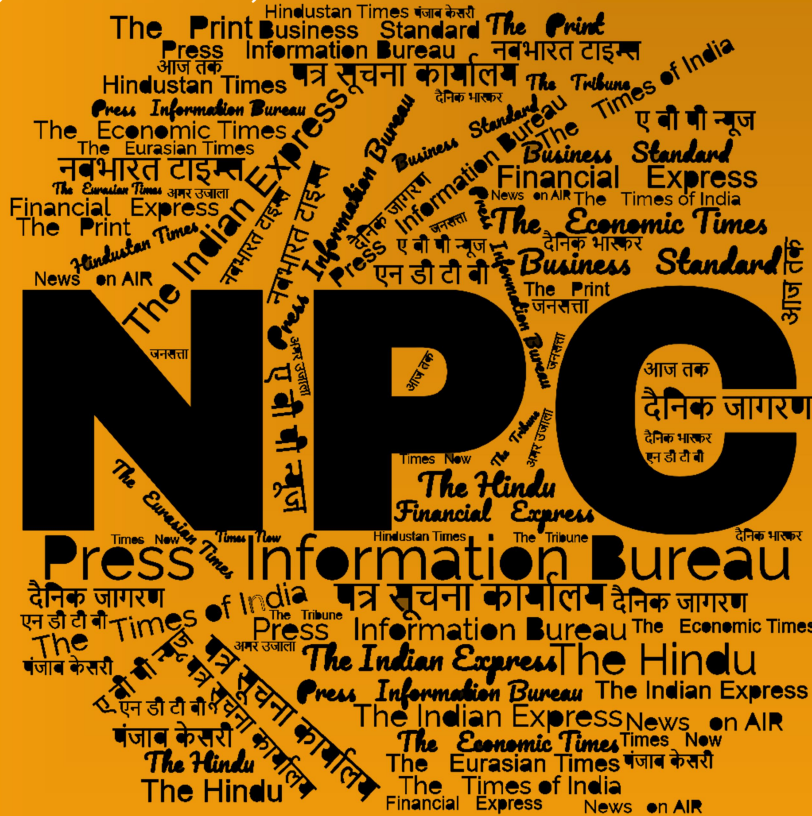
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समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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Thu, 23 Feb 2023

दुश्मनों के लिए काल है भारत का Tejas Mk2, एक साथ ले जाता 8 मिसाइलें- जानें खासियत

भारतीय लड़ाकू विमान तेजस को दुनिया के कई देशों में पसंद किया जा रहा है. अमेरिका भी तेजस विमान की तारीफ कर चुका है. रक्षा अनुसंधान विकास संगठन (डीआरडीओ) के अंतर्गत आने वाली एयरोनॉटिकल डेवलपमेंट एजेंसी (एडीए) के एक वरिष्ठ अधिकारी ने कहा कि स्वदेशी लाइट कॉम्बैट एयरक्राफ्ट (LCA) Tejas Mk2 न केवल आठ बियॉन्ड-विजुअल-रेंज (BVR) मिसाइलों को एक साथ ले जाने में सक्षम है, बल्कि सभी देशी हथियारों के साथ-साथ अन्य देशों के उन्नत हथियारों को भी इंटीग्रेट कर सकता है.

एलसीए Mk2 के प्रोजेक्ट डायरेक्टर वी मधुसूदन राव ने बेंगलुरु में पिछले दिनों आयोजित देश की सबसे बड़ी विमानन प्रदर्शनी एयरो इंडिया 2023 के मौके पर द इंडियन एक्सप्रेस को बताया कि “दुनिया में इस कैटेगरी का कोई अन्य सिंगल-इंजन वाला विमान एक साथ आठ बीवीआर मिसाइल एक साल नहीं ले जा सकता है. इसकी ये अनूठी खासियतें इसे वैश्विक फर्मों द्वारा निर्मित विमानों के बीच खड़ा कर देंगी और इसकी निर्यात क्षमता को काफी बढ़ा देंगी.”

भविष्य बीवीआर कॉम्बैट का: प्रोजेक्ट डायरेक्टर

प्रोजेक्ट डायरेक्टर राव ने यह भी उल्लेख किया कि “भविष्य बीवीआर कॉम्बैट का है और हम उसके लिए तैयार हैं.” इस शीर्ष अधिकारी ने कहा कि विमान को भारी गतिरोध वाले हथियारों के साथ इंटीग्रेट किया जाएगा, जैसे कि SCALP, एक हवा से जमीन, लंबी दूरी की गहरी मार करने वाली मिसाइल. उन्होंने इसकी खासियत बताते हुए कहा, “हमने इस विमान (LCA Mk 2) को डिजाइन करते समय एडवांस्ड फ्रांसीसी और रूसी हथियारों, अन्य पश्चिमी देशों के हथियारों के अलावा ASTRA (एक BVR हवा से हवा में मार करने वाली मिसाइल) जैसे स्वदेशी हथियारों के

एकीकरण पर विचार किया. अन्य विमानों के विपरीत, LCA Mk2 कई देशों के अद्वितीय हथियारों को एकीकृत करने में सक्षम होगा.”

उन्होंने यह भी कहा कि LCA Mk2 ने इंप्रूव्ड रेंज समेत एलसीए तेजस एमके1 से तकनीक में भारी उछाल देखा है. एलसीए तेजस एमके1 के लिए युद्ध लड़ने को लेकर मिशन इंडुरेंस 57 मिनट था, लेकिन LCA Mk2 के लिए यह 120 मिनट रहा. Mk2 में 11 हार्डपॉइंट होंगे. LCA Mk2 के पास हथियार ले जाने की क्षमता 6.5 टन की होगी. LCA Mk2 में जनरल इलेक्ट्रिक GE-414 इंजन लगा होगा.

LCA Tejas के लिए कई देशों से बातचीत

वरिष्ठ रक्षा अधिकारी का यह बयान ऐसे समय में आया है जब सार्वजनिक क्षेत्र की विमान निर्माण कंपनी हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल) LCA Tejas Mk-1A को बेचने के लिए मलेशिया, अर्जेंटीना, मिस्र और बोत्सवाना सहित कई देशों के साथ लगातार बातचीत कर रही है.

हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल) के अध्यक्ष और प्रबंध निदेशक सीबी अनंतकृष्णन ने पिछले हफ्ते जानकारी देते हुए बताया था कि मलेशिया को 16 हल्के लड़ाकू जेट बेचने की कोशिश पर “थोड़ा झटका” लगा था क्योंकि उसकी ओर से एलसीए की जगह कोरियाई केएआई एफए-50 (KAI FA-50) को शॉर्टलिस्ट कर लिया गया था.

भारतीय सेना में शामिल होंगे

पिछले साल सितंबर में सुरक्षा मामलों की कैबिनेट समिति (सीसीएस) ने 4.5 पीढ़ी के लड़ाकू विमान एलसीए एमके2 को विकसित करने के लिए 9,000 करोड़ रुपये मंजूर किए थे.

भारतीय वायु सेना के घटते लड़ाकू स्क्वाड्रनों में अंतर को कम करने के लिए, LCA Mk2 और स्वदेशी उन्नत मध्यम लड़ाकू विमान (AMCA) को जगुआर, मिग-29 और मिराज 2000 की जगह शामिल किया जाएगा, ये सब अगले एक दशक में रिटायर हो जाने वाले हैं. उन्होंने कहा, “हमारी पहली प्राथमिकता (रक्षा) सेवाओं की जरूरत को पूरा करना है, जिसके बाद हम अन्य देशों से अनुरोधों का सम्मान करेंगे.” उन्होंने कहा, “अब तक 16 देशों ने लड़ाकू जेट विमान को लेकर रुचि दिखाई है.”

<https://www.tv9hindi.com/india/light-combat-aircraft-lca-tejas-mk2-can-carry-8-bvr-missiles-with-french-russian-weapons-drdo-au255-1732385.html>

Incorporate French, Russian Armaments, 8 BVR Missiles: Tejas Mk2 to Stand out with Unique Features

According to a senior official from the Aeronautical Development Agency (ADA), which is part of the Defence Research and Development Organization (DRDO) of India, the indigenous Light Combat Aircraft (LCA) Tejas Mk2 is not only able to carry eight Beyond-Visual-Range (BVR) missiles at once but can also integrate all indigenous weapons as well as a number of advanced weapons from other nations.

“No other single-engine aircraft of this class in the world can carry eight BVR missiles simultaneously. These unique features will make it stand out among aircraft manufactured by global firms, upping its export potential,” the LCA Mk2 project director, V Madhusudana Rao, was reported saying by The Indian Express.

The official declared that the aircraft will be equipped with powerful standoff weaponry, such as SCALP, an air-to-ground, long-range deep strike missile, and that the future is BVR battle and we are ready for that.

He clarified, “we considered the integration of advanced French and Russian weapons, weapons from other Western countries and indigenous weapons like ASTRA [a BVR air-to-air missile] while designing this aircraft [LCA Mk 2]. Unlike other aircraft, LCA Mk2 will be able to integrate unique weapons from various countries.”

According to the official, the LCA Mk2 has a significantly enhanced range over the LCA Tejas Mk1 in terms of technology. For fighting a war, the LCA Tejas Mk1 has a mission endurance of 57 minutes, whereas the LCA Tejas Mk2 has a mission endurance of 120 minutes. There will be 11 hardpoints (an airframe weapon station intended to hold external weight) on the Mk2.

The LCA Mk2 will be able to carry 6.5 tonnes of weapons and will be powered by a GE-414 engine from General Electric.

The senior official's comments come as Hindustan Aeronautics Limited (HAL), a government-owned aircraft manufacturer, is negotiating the sale of LCA Tejas Mk-1A to Malaysia, Argentina, Egypt, and Botswana, among other nations.

The official said that there had been some delay in the transfer of government funds despite the essential design assessment of the aircraft being complete and manufacture had begun. He stated that the plane should be released by the following year.

When the Jaguars, MiG-29s, and Mirage 2000s start to retire in ten years, LCA Mk2 and the indigenous Advanced Medium Combat Aircraft (AMCA) will be promoted to fill the gap in the Indian Air Force's dwindling fighter units.

<https://www.timesnownews.com/india/incorporate-french-russian-armaments-8-bvr-missiles-tejas-mk2-to-stand-out-with-unique-features-article-98173838>



Thu, 23 Feb 2023

Indian Army's Eastern Command Raises First Medium Range Surface to Air Missile Regiment

In a significant boost to India's defence capabilities, the Indian Army's Eastern Command raised the first medium-range surface-to-air missile (MRSAM) regiment.

Officials in the Indian Army said the MRSAM regiment will provide air defence against aerial threats.

The MRSAM regiment will provide point and area air defence for ground assets against a wide range of threats, including fighter aircraft, UAVs, helicopters, guided and unguided munitions, sub-sonic and supersonic cruise missiles, etc.

The regiment has been equipped with the MRSAM weapon system indigenously developed by the Defence Research and Development Organisation (DRDO).

The MRSAM weapon system, which is also called the 'Abhra' weapon system, is a state-of-the-art medium range air defence weapon system jointly developed by the DRDO and the Israeli Aerospace Industries (IAI) with active participation from Indian public and private defence industry partners including MSMEs.

The MRSAM weapon system is capable of engaging multiple targets up to a range of 70km in severe saturation scenarios. The missile is powered by indigenously developed rocket motor and control system for achieving high manoeuvrability during the terminal phase.

The weapon system comprises missiles, combat management system (CMS), mobile launcher systems (MLS), advanced long range radar, mobile power system (MPS), radar power system (RPS), reloader vehicle (RV) and field service vehicle (FSV).

During the first visit to the MRSAM regiment, Lieutenant General of Eastern Army Commander R P Kalita said with such giant leap towards indigenisation in defence sector, India will soon become self-reliant in defence manufacturing in line with the Prime Minister Narendra Modi's vision of 'Atmanirbhar Bharat'.

<https://www.indiatoday.in/india/story/indian-armys-eastern-command-raises-first-medium-range-surface-to-air-missile-regiment-2338733-2023-02-23>

Fri, 24 Feb 2023

Aramane Giridhar gets Extension as Defence Secretary

Defence Secretary Aramane Giridhar was on Thursday given an extension in service till October next year, a Personnel Ministry order said.

Mr. Giridhar, a 1988-batch Indian Administrative Service (IAS) officer of the Andhra Pradesh cadre, took over as the Defence Secretary on November 1 last year.

He was due to retire in June after completing 60 years of superannuation.

The Appointments Committee of the Cabinet has approved the extension in service for a period up to 31.10.2024, the order said.

<https://www.thehindu.com/news/national/defence-secretary-aramane-giridhar-gets-extension-in-service-till-october-next-year/article66546527.ece>

Thu, 23 Feb 2023

After a Year of Ukraine War, Forces Looking to Tide over Delays in Arms Supply

As the war in Ukraine completes one year, apprehensions of delays in delivery of spares, components and ammunition have further heightened for the Indian armed forces. Official sources said deliveries of some spares and components which had been delayed from Ukraine could resume shortly. Even as uncertainties remain, a major effort is under way to find alternative sources from the domestic industry as well as other countries, senior defence officials noted. This is in addition to the payments issue which has delayed 'milestone payments'.

"We expect some deliveries from Ukraine to resume very soon," a senior official said. There are also delays from Russia, including some items which are not of systems they are directly employing in the war. We are looking for some clarity on it," the official stated.

In contrast, in some cases Russia has delivered some systems including the S-400 air defence systems but 'milestone payments' have been delayed.

The Navy and the Indian Air Force (IAF) have major platforms from both Russia and Ukraine, Navy engines and IAF the AN-32 transport aircraft from Ukraine.

While the stocks last for long due to additional sourcing done in the backdrop of the stand-off with China in eastern Ladakh, the concern is about timely deliveries for follow-on contracts placed as part of annual cycles. The shortages have been offset to some extent by reaching out to the domestic industry as well as scouting third countries which can meet the requirement. For instance, the Army is feeling the pinch in terms of spares and ammunition, particularly for its air

defence and armoured fleet, which are largely of Russian origin, a fact recently acknowledged by Army Chief General Manoj Pande.

Ammunition from Bulgaria

The Army is in advanced stages of procuring 23mm ammunition for its air defence guns from alternative sources. Two big industrial houses have sourced the ammunition from Bulgaria and the quality assurance trials are under way and it will soon be procured, sources said.

Giving example of this import substitution enabled by the private industry, speaking on the sidelines of Aero India, Navy Chief Adm R. Hari Kumar gave the example of aircraft carrier INS Vikramaditya which has been undergoing a long refit that has been delayed.

“There are many parts which never came in time or not available as the original manufacturers themselves have closed the line. So we identified so many companies in India that could give us... in fact they gave us better quality,” he said, adding there are so many things that are being manufactured and exported to foreign manufacturers that were not known. There is lot of capability and over time we have been able to identify and then source from them, he added.

Since the beginning of the war in Ukraine on February 24, 2022, Russia has seen a series of sanctions imposed by the West as well as expelled from the global SWIFT payment system.

Gen. Pande said in January that sustenance of weapon systems and equipment, in terms of spares and ammunition, is one issue that the Army has addressed and they got a waiver and sanction to procure even if it is ex-imports for the next two to three years. “We have 40 such cases, including spares and ammunition, largely pertaining to air defence and tank fleet. We are looking at how the sustenance requirement is met,” he had stated.

Speaking at a seminar earlier this month, Russian Envoy in India Denis Alipov said the vostro accounts have been opened, the mechanism of rupee-rouble trade has been established and it is now a matter for the banks to use it while terming that many Indian banks are “over-cautious” for fear of any secondary sanctions from the U.S.

<https://www.thehindu.com/news/national/one-year-of-ukraine-war-armed-forces-scout-for-options-to-tide-over-potential-delays-in-deliveries-of-spares-and-ammunition/article66545903.ece>

The Tribune

Thu, 23 Feb 2023

Ex-Army Chiefs Call for Strong Ties with Nepal

Military bond between India and Nepal remains the bedrock of ties between the two nations and there is a need to further strengthen the bond to enhance the bilateral relations. This was brought out at a conclave of chiefs of the two armies to mark 260 years of the Nepali Army.

Four former Indian Army Chiefs — General VN Sharma, General JJ Singh, General Deepak Kapoor and General Dalbir Singh Suhag — attended the celebrations as special guests.

General Suhag emphasised the need to further strengthen the bond between the two armies to enhance bilateral relations. Chief of Nepal Army General Prabhu Ram Sharma highlighted the significance of the conclave. The Indian guests also attended a cultural show at the Army Club. President Bidya Devi Bhandari, the supreme commander of the Nepali Army, was the chief guest at the event where PM Puspha Kamal Dahal was also present. The Nepali Army presented an encompassing show representing all ethnic communities across Nepal. The visiting Generals went to the Nepali Army Memorial to honour its martyrs. They later attended the Army Day main event at the Army Pavillion in Tudikhel. Various Gurkha brass bands representing three Armies (Nepali, Indian and British) jointly performed on the occasion.

<https://www.tribuneindia.com/news/nation/ex-army-chiefs-call-for-strong-ties-with-nepal-482565>

THE ECONOMIC TIMES

Fri, 24 Feb 2023

Drone Wars: Cartelisation Complaints Reach Defence Ministry on Army's Bulk UAV Purchase Plans

Even as the Army is looking to place bulk orders for small unmanned aerial vehicles (UAVs), accusations of cartelisation have reached the defence ministry, with competitors alleging that similar equipment is being offered by several companies, giving undue advantage to a Mumbai-based drone manufacturer. This has been countered by the Army that says consortiums are allowed to bid as long as the equipment being offered is unique.

The allegations pertain to acquisition of surveillance copter drones and mini remotely piloted aircraft that are being undertaken on a fast-track basis under the emergency financial powers route granted to the armed forces. Under this route, forces can purchase equipment worth up to ₹300 crore per project on a fast basis, with deliveries to be ensured by the winner within a year.

Complaints received by the defence ministry as well as Army HQ allege that during trials in Tawang (Arunachal Pradesh) and north Sikkim last month, at least four companies offered the same equipment, giving its original manufacturer an advantage over the competition.

Army officials, however, have countered that three entities had formed consortiums with a lead original equipment manufacturer and offered different models of drones, which is allowed under acquisition rules of the defence ministry.

In the surveillance copter case, (the Army is looking to purchase 1,000 systems for border duties) officials said that one of the bidders was found to be non-compliant and was eliminated from the competition as it had submitted the same equipment as the original manufacturer.

It is also learnt that in the case of mini remotely piloted aircraft too, one company was disqualified by the Army as it had offered the same equipment as the original manufacturer, also triggering a formal complaint of cartelisation by the competition.

While contract orders under the emergency route are of a relatively lower value below ₹300 crore, there is intense competition as an order paves the way for induction of a much larger quantity in the future.

<https://m.economictimes.com/news/defence/drone-wars-cartelisation-complaints-reach-defence-ministry-on-armys-bulk-uav-purchase-plans/articleshow/98189047.cms>

THE TIMES OF INDIA

Fri, 24 Feb 2023

In a 1st, Indian Submarine INS Sindhukesari Docks in Indonesia amid South China Sea Conflict

An Indian submarine has, for the first time ever, docked in Indonesia, which is among the countries locked in a maritime dispute with China in the contentious South China Sea, as part of the continuing overall diplomatic-military outreach to Asean countries.

The 3,000-tonne diesel-electric submarine, INS Sindhukesari, reached Jakarta for the ‘maiden operational turnaround’ after transiting through the Sunda Strait on Wednesday. “Indian warships often visit Indonesia and other Asean countries. This first long-range deployment of a submarine underlines the operational capability and reach of the country’s underwater combat arm as well,” a senior official told TOI.

INS Sindhukesari had undergone a major Rs 1,197-crore ‘medium refit-cum-life extension’ at Severodvinsk in Russia that ended in 2018, as part of the ongoing plan to upgrade four old Sindhughosh-class (Russian-origin Kilo-class) and two Shishumar-class (German HDW) submarines to stem depletion in the underwater fleet. The submarine’s deployment to Indonesia comes soon after India conducted operational training to handle the BrahMos supersonic cruise missiles for 21 military personnel from Philippines at Nagpur earlier this month.

India will supply three missile batteries of the shore-based anti-ship systems of the BrahMos, a deadly conventional (non-nuclear) weapon that flies almost three times the speed of sound at Mach 2.8 with a strike range of 290-km, under the \$375 million contract inked in January last year.

The first such BrahMos export order to Philippines, which also has bitter territorial disputes with China in the South China Sea, is expected to pave the way for such deals with other Asean countries like Indonesia and Vietnam.

Along with the push for military ties with African and Gulf countries on one side, India has been steadily cranking up defence relations with Asean countries on the other side through combat exercises, exchanges, training programmes to operate fighters and submarines, and now increasingly weapon supplies.

India, for instance, had transferred a Kilo-class submarine INS Sindhuvir to Myanmar in 2020, as was then reported by TOI. Apart from BrahMos, jointly developed with Russia, India also hopes to sell the indigenous Akash missile systems, which can intercept hostile aircraft,

helicopters, drones and subsonic cruise missiles at a range of 25-km, to countries like Philippines, Indonesia and Vietnam, among other countries.

On the bilateral exercises front, India has conducted the ‘SIMBEX’ naval exercise with Singapore, the ‘Agni Warrior’ Army exercise with Singapore, ‘Harimau Shakti’ with Malaysia and the ‘Garud Shakti’ with Indonesia in recent months.

With Indonesia, India also conducts coordinated naval patrols twice a year, with the last one being held along the international maritime boundary line in December. “India and Indonesia have expanded their strategic and defence cooperation in a wide range of areas, especially after inking a new defence cooperation agreement during PM Narendra Modi’s visit to the country in 2018,” another official said.

<https://timesofindia.indiatimes.com/india/in-a-1st-indian-submarine-docks-in-indonesia-amid-south-china-sea-conflict/articleshowprint/98192650.cms>



Thu, 23 Feb 2023

Defence Secy Giridhar Aramane & his Sri Lankan Counterpart Review Bilateral Ties During 7th Annual Defence Dialogue in New Delhi

Defence Secretary Giridhar Aramane and his Sri Lankan counterpart reviewed bilateral ties during 7th Annual Defence Dialogue in New Delhi on Thursday. During the meeting, the ongoing defence cooperation activities between the two countries were reviewed. Both sides agreeing to increase the complexity of bilateral exercises. They reaffirmed their commitment to avail maximum benefits from each other’s experience and capacities.

Mr Aramane thanked his Sri Lankan counterpart General Kamal Gunaratne and his delegation for a fruitful dialogue. He stated that India looks forward to continued engagement based on the common understanding reached at the dialogue.

This Annual Defence Dialogue is the highest institutionalised interactive mechanism between both the countries. Its significance in chartering the future course of the relations between the Armed Forces of India and Sri Lanka was highlighted by the importance given to the talks by both sides. The Armed Forces of both countries continue to seek bilateral cooperation in multiple fields and increased engagements are a positive sign for the future of bilateral relations.

<https://newsonair.com/2023/02/23/defence-secy-giridhar-aramane-his-sri-lankan-counterpart-review-bilateral-ties-during-7th-annual-defence-dialogue-in-new-delhi-2/>

Business Standard

Fri, 24 Feb 2023

India, Sri Lanka Agree to Increase 'Complexity' of Bilateral Exercises: MoD

India and Sri Lanka on Thursday agreed to increase intensity of bilateral military exercises and vowed to avail maximum benefits from each other's experience and capacities, a move that came amid China's attempts to expand its influence in the Indian Ocean region.

The two sides reviewed their defence and security cooperation at the seventh India-Sri Lanka annual defence dialogue that took place in Delhi.

"During the meeting, the ongoing defence cooperation activities between the two countries were reviewed, with both sides agreeing to increase the complexity of bilateral exercises," the defence ministry said. "In the context of training, both sides reaffirmed their commitment to avail maximum benefits from each other's experience and capacities," it said in a statement. The dialogue was co-chaired by Defence Secretary Giridhar Aramane and his Sri Lankan counterpart General Kamal Gunaratne.

The ministry said the armed forces of both countries continue to seek bilateral cooperation in multiple fields and increased engagements are a positive sign for the future of bilateral relations.

It said Aramane thanked General Gunaratne and his delegation for a "fruitful dialogue" and stated that India looks forward to continued engagement based on the common understanding reached at the dialogue.

The Indian delegation also included officials from headquarters of the Integrated Defence Staff, service headquarters and the Ministry of External Affairs.

The Sri Lankan delegation included Commander of Sri Lankan Air Force Air Marshal SK Pathirana amongst other senior dignitaries.

The annual defence dialogue is the highest institutionalised interactive mechanism between both the countries.

"Its significance in chartering the future course of the relations between the armed forces of India and Sri Lanka was highlighted by the importance given to the talks by both sides," the ministry said.

The defence ties between India and Sri Lanka have witnessed steady expansion.

In August last, India handed the island nation a Dornier maritime surveillance aircraft.

The aircraft was given to Sri Lanka from the inventory of the Indian Navy to help the country meet its immediate security requirement.

The Indian Navy has been supporting various capacity building measures of the Sri Lankan Navy including providing indigenously constructed Offshore Patrol Vessels (OPVs).

https://www.business-standard.com/article/current-affairs/india-sri-lanka-agree-to-increase-complexity-of-bilateral-exercises-mod-123022301030_1.html

Thu, 23 Feb 2023

Mysuru Aerospace Company Inks Pact with German Defence Firm

Rangsons Aerospace, an aerospace product technology company based in Mysuru, has signed a Memorandum of Understanding with Germany-based Hensoldt-The Sensor Solution House to jointly explore new business opportunities, support newer technological advancements, and help improve technological expertise for realising the goals of India's 'Atma Nirbhar Bharat' campaign.

Rangsons Aerospace of Mysuru-based NR Group that has a diverse business portfolio, signed the MoU at the recently-concluded Aero India 2023 in Bengaluru with the German company. The MoU was signed by Pavan Ranga, Managing Director, Rangsons Aerospace, and Jonathan Field, V-P International Business Development, Hensoldt.

The MoU is aimed at developing an indigenous data link system, which can work across various airborne platforms for enhancing network centric warfare capability of the Indian armed forces.

Pavan Ranga of Rangsons said, "With this partnership, we will be manufacturing the units for rotary, fixed wing and unmanned aerial vehicles."

Rangsons Aerospace specialises in proof of concept, prototyping, product development, and platform integration services in the aerospace, defence and homeland security domains.

Andleeb Shadman, MD, Hensoldt India, said, "We are optimistic of supporting the Indian government's vision of Atma Nirbhar Bharat in the Indian defence sector. Through this collaboration, we are collaborating to build a world-class data link solution that can work across a large cross-section of airborne platforms."

<https://www.thehindu.com/news/national/karnataka/mysuru-aerospace-company-inks-pact-with-german-firm-defence/article66544584.ece>



Thu, 23 Feb 2023

Indo-US Air Power Connect: Why there is a Pitch for an American Fighter

By Air Marshal Anil Chopra

The United States contingent at the Aero India 2023 was one of the largest ever. For the first time a fifth-generation aircraft had not only been brought to an Indian airshow but also performed the flying display. The U.S. defence sales in the last over a decade have mostly been in the military aviation sector.

Having already sold transport aircraft and helicopters, the pitch now is to push an American fighter into the Indian defence ecosystem. The meetings and presentations were all geared towards the same.

US-India strategic congruence and QUAD connection

The U.S. interests to contain competitor and possible rival China brought India into USA's Indo-Pacific strategy. India, a long term friend of now weakened Russia needed U.S. cooperation on global security matters; support for inclusion of India in United Nations Security Council (UNSC); greater role in World Bank and IMF; and admission into multilateral export control regimes like Nuclear Suppliers Group, MTCR, Wassenaar Arrangement, and Australia Group. Post 2000, the USA became more open to selling high end military equipment to India. In 2016, India and USA signed the Logistics Exchange Memorandum of Agreement (LEMOA) and India was declared a major defence partner of the USA. In September 2018 India and USA signed the Communications Compatibility and Security Agreement (COMCASA), thus increasing interoperability between two nation's militaries. It is the India specific version of the much wider Communication and Information on Security Memorandum of Agreement (CISMOA).

It allows India to procure and transfer specialised equipment for encrypted communications for US origin military platforms like the C-17, C-130, and P-8Is, thus improving operational efficiency. Basic Exchange and Cooperation Agreement, the last of the key foundational agreements was signed in 2020.

India is an important member of Quad now. All the four partners have regular summit level and 2+2 minister level meetings. There are military logistics agreements between all, and they all take part in regular military exercises. The USA has been supplying military equipment. President Barack Obama became the first US president to be the chief guest at Republic Day on 26 January 2015. Among the increasing cooperation in defence, aviation has seen the fastest results.

US military aircraft in India

IAF first ordered the Lockheed C-130J-30 Super Hercules aircraft in early 2008 for special operations under the US government's Foreign Military Sales (FMS) program. The Indian Navy received the Boeing P-8I Poseidon for maritime surveillance, Electronic Intelligence (ELINT), anti-submarine warfare (ASW) roles.

In 2009, the IAF inducted three specially equipped Boeing 737 Business Jet (BBJ) for VVIP duties. Boeing C-17 Globemaster III strategic airlift military transport aircraft were inducted next. Two custom-made B-777 have also been procured to replace the older Air India B-747 jumbo jets for VVIP duties. Boeing Apache Longbow AH-64E attack helicopters, and Boeing CH-47 D/F Chinook heavy-lift helicopters formed the rotary-wing purchases.

In June 2017, the US State Department approved the sale of 22 General Atomics MQ-9 Guardian/Predator-B long-range unmanned combat aerial vehicle (UCAV) drones to India. The MQ-9 has both land and sea variants, and can be armed with up to four AGM-114 Hellfire air-to-surface missiles and laser-guided bombs. Two have been on lease with the Indian Navy since 2020. The case for procuring 10 each for the three armed forces is under processing.

Make In India: Boeing

Boeing has been a major player in India's commercial aviation sector, and Air India has recently announced a huge airliner order. Boeing also has a huge presence in military aircraft with Indian Air Force's (IAF) C-17, BBJ, VVIP B-777, and Chinook and Apache helicopters, and Indian Navy's P-8I. Boeing's F-18 Super hornet is vying for IAF (114 fighter program) and Indian Navy's (57 carrier aircraft) contracts. Boeing has set up a Research & Technology Centre in Bangalore.

A public-private partnership brings together Boeing, Hindustan Aeronautics (HAL) and Mahindra's global scale, manufacturing and supply chain expertise. HAL has been the single-source producer of 757 overwing exit doors. HAL has also manufactured the 777 up-lock boxes, F/A-18 gun bay doors, F/A-18 wire harnesses, P-8I weapons bay doors, and P-8I identification friend-or-foe transponders. BEL is also on contract to provide F/A-18 flight deck cockpit panels. HAL makes a gun-bay door for the F/A-18. Boeing has invested in engineering centres at Bengaluru and Chennai with a talented pool of over 3,000 engineers.

Boeing's joint venture with Tata Advanced Systems Limited (TASL) is for aerospace and defence manufacturing including unmanned aerial systems. The joint venture (JV) will manufacture aero-structures for aircraft and collaborate on integrated systems development opportunities in India. TASL is already manufacturing aero-structures for CH-47 Chinook and Apache helicopters, including for global customers.

In September 2014, Dynamatic Technologies (DTL) and Boeing inaugurated a plant to manufacture critical parts for Chinook helicopters, including ramp and pylons. Dynamatic Technologies and Tata Advanced Materials Limited (TAML) have already delivered P-8I power and mission equipment cabinets, and TAML is making auxiliary power unit door fairings and composite tail-cones for the P-8I. Boeing created a facility with TAL Manufacturing Solutions Ltd to manufacture floor beams for the Boeing 787-9 Dreamliner. TAL also makes ground support equipment for the C-17.

Bharat Electronics Limited (BEL) has delivered the Indian-designed Data Link II for the P-8I. BEL has also delivered the identification friend-or-foe (IFF) interrogator. Electronics Corporation of India (ECIL) has provided the speech secrecy systems for the P-8I.

Hyderabad based Avantel Ltd has delivered the mobile satellite systems for P-8I. Hyderabad-based Cyient (formerly Infotech) has supported a number of critical design-engineering projects for Boeing aeroplanes, and currently provides design and stress support on the 747-8 Freighter and the 787-8 and 787-9.

Lockheed Martin: Big in India

Lockheed Martin, the world's biggest arms manufacturer, is looking for a "game-changing" partnership in India. Lockheed Martin is the pre-eminent designer, developer and manufacturer of the world's most advanced fighter aircraft like the F-16, F-22 and F-35. They have a joint venture company with TASL where airframe components for the C-130J airlifter and the S-92 helicopter are manufactured in India in large numbers. Production of more than 5,000 precision components that compose each S-92 cabin is 100 percent indigenous to India. All C-130Js delivered to customers around the world have major aero-structure components from India.

They are looking to sell F-21 aircraft (advanced version of F-16) for IAF. The proposal is meant to put India at the epicentre of the world's largest defence ecosystem and deliver unmatched sustainment and export opportunities. 2250 F-16 are still flying globally. TASL has been chosen

to produce the F-16s in India. Meanwhile, Lockheed Martin has begun building F-16 wings and will start exporting from the facility in Hyderabad in 2020. In July 2019, Lockheed Martin signed MoUs with Indian start-ups such as Terero Mobility, Sastra Robotics, and NoPo Nanotechnologies to boost India's aerospace and defence industry.

As many as 24 Lockheed Martin's Sikorsky multi-role MH-60R Seahawk maritime helicopters for the Indian Navy's anti-surface and anti-submarine warfare operations are under induction. Lockheed Martin also provides research grants for teams from Indian universities to work with local industry partners to develop design specifications.

General Electric (GE)

General Electric is an American multinational that operates in aviation, healthcare, renewable energy, and transportation, among many others. GE's presence in India dates back to 1902 when they installed India's first hydropower plant. GE Aviation is the world's leading producer of large and small engines for commercial, military, business and general aircraft. GE supplies F404IN20 engines for the Light Combat Aircraft (LCA) 'Tejas' Mk-1. The F414-INS6 engines are selected to power the Mk-2 version. GE's CFM56 engines power the Indian Navy's P-8I. GE's some other systems have been deployed on various Indian platforms including the Hawk Mk 132, SEPECAT Jaguar, P-8I, C130J and HJT-36 Sitara. GE has joined with Tata group to make LEAP engines in India.

Military exercises and interoperability

Indo-US military exercises have come a long way since exercise 'Shiksha' of 1963 when IAF was exposed to modern air defence concepts and high performance air combat. The two armies have been conducting exercise 'Yudh-Abhyas'. U.S., India, Japan, and some other navies participate in annual exercise 'Malabar'. Rim of the Pacific Exercise (RIMPAC) covers the broad expanse of the Indo-Pacific. From 2004 onwards, 'Cope India' series of Indo-US air exercises began.

State of the art aircraft participate from both sides. Participation in Red-Flag advanced air combat training exercises at Nellis Air Force Base, Nevada, and at Eielson Airbase in Alaska give the IAF exposure to a NATO-like air environment. The USA had great presence in the recent Pitch Black exercise in Australia where many countries fielded F-35s.

India Innovation Growth Program

As a part of its larger commitment, Lockheed Martin has sponsored and supported the India Innovation Growth Program (IIGP) since 2007 in partnership with the Indian Department of Science and Technology, Indo-U.S. Science and Technology Forum, Federation of Indian Chambers of Commerce and Industry, Stanford Graduate School of Business, and the IC2 Institute at the University of Texas. IIGP has supported more than 400 innovators and start-ups with in-depth technology commercialization training and handholding support to commercialise and scale their ventures. To date, the revenue generated for the Indian entrepreneurs through this program is over \$1 billion.

Defence Technology and Trade Initiative (DTTI)

The India US Defence Technology and Trade Initiative (DTTI) was signed in 2012. DTTI's main aim is to strengthen India's defence industrial base, explore new areas of technological development and expand Indo-US business ties.

The DTTI has now matured enough where its varied activities could be translated into accomplishments. Among the ambitious projects identified are a plan to share jet engine technology, an initiative that has floundered given a strict export control regime in the US and the lack of a strong business case. Focus on start-ups is likely to enable US-based research labs to work in coordination with Indian companies for cutting edge defence technologies. In addition, the two sides are also discussing the possibility of jointly developing systems for approved third nations to pursue export opportunities. Cooperation in the field of space technology is also of interest.

Strategic Trade Authorization

The United States has designated India as Strategic Trade Authorization-1 (STA-1) country that will allow the country to buy highly advanced and cutting-edge sensitive technologies from America. This coveted status brings India in par with US's closest allies and partners such as NATO, Japan, South Korea and Australia. With this, there is an ease in restrictions for high-technology product sales to India, and India will receive licence-free access to a wide range of dual-use technologies in conjunction with steps that India has committed to take to advance its export control objectives. It will benefit U.S. manufacturers while continuing to protect its national security. Bilateral defence trade which was essentially zero in 2008, has reached an estimated \$22 billion by the end of 2022.

US-India Business Council (USIBC)

The U.S.-India Business Council (USIBC) was formed in 1975 as a business advocacy organisation to enlighten and encourage the private sectors of both India and the United States to enhance investment flows. The organisation serves as a direct link between business and government leaders, resulting in increased trade and investment to strengthen ties between the two nations. Aerospace & Defence are a major area today.

Defence Policy Group (DPG)

The India-US Defence Policy Group (DPG) in Washington is the top official-level meeting mechanism between India and the US on defence issues, which comprehensively reviews and guides all aspects of bilateral cooperation between the two countries. The meetings take stock of the progress made in various fields of defence cooperation, including in defence trade, technology, procurement, industry, R&D and mil-to-mil engagement. There are various working groups.

Threat of sanctions against India

In October 2018, India inked the agreement worth \$ 5.43 billion with Russia to procure five S-400 Triumf surface-to-air missile defence systems, ignoring America's Countering America's Adversaries Through Sanctions Act (CAATSA). The U.S. threatened India with sanctions. India was also threatened over India's decision to buy oil from Iran.

Sanctions if imposed could have a disastrous effect on Indo-U.S. relations. However, the USA is conscious of India's requirements and sensitivities and treads a mid-path.

Future military aircraft push

Having already got into India's transport, maritime and helicopter sales ecosystem, USA is now keen to sell fighter aircraft. Large scale military sales will increase India's dependency on the USA and start reducing India's huge Russian military aircraft basket. The USA feels that it is

still premature for India to be offered the F-35 fifth-generation fighter. They would prefer to first sell a 4.5 generation aircraft of the F-21, F-18 class or at best the F-15E/F.

India has currently been linking the fighter aircraft selection to both Make-in-India and transfer of important technologies, especially the aero-engine. Also some are questioning, is India ready for yet another fleet of aircraft in its already multi-fight fleet mix? USA has also been pushing for the Boeing KC-46 Flight Refuelling Aircraft (FRA). They are trying to strengthen the case that they will offer both ‘flying boom’ and ‘probe and drogue’ refuelling options, that are today required for India’s diverse fleets. The other area of U.S. push is the General Atomics Predator drones. The Government of India that follows strategic autonomy will take appropriate calls.

India is today in an enviable position where the Russians, Americans and Europeans are wooing her as a geo-strategic friend and as a defence systems market. It is clear that the U.S. needs India to counter-balance China in the Indo-Pacific. They want India to dominate the Indian Ocean and act as a democratic pillar against Chinese expansion and threat. The future sees greater defence cooperation between the two largest and powerful democracies.

<https://www.firstpost.com/opinion/indo-us-air-power-connect-why-there-is-pitch-for-an-american-fighter-12195552.html>

Naval
Technology

Thu, 23 Feb 2023

US, South Korea and Japan Perform Ballistic Missile Defence Exercise

Three warships of the US, South Korea, Japan carried out trilateral ballistic missile defence exercise just days after the recent North Korea’s intercontinental ballistic missile (ICBM) test.

The defence drill was undertaken in the Sea of Japan on 22 February.

This trilateral exercise saw participation of the Arleigh Burke-class guided-missile destroyer USS Barry (DDG 52), Japan Maritime Self-Defense Force’s Atago-class guided missile destroyer JS Atago (DDG 177), and Republic of Korea (ROK) Navy’s destroyer ROKS Sejong the Great (DDG 991).

Besides bolstering the interoperability of the participating forces, the drill intended to strengthen the trilateral cooperation, and their commitment to uphold a free and open Indo-Pacific.

On 18 February, the Democratic People’s Republic of Korea (DPRK, North Korea) test-fired a long-range ballistic missile Hwasong-15 ICBM, which is claimed to be capable of hitting targets in the US, reported The KoreaTimes.

On 19 February, the US carried out separate air exercises – one with the Japanese and the other with South Korean air forces – to boost response capability in the event of any regional threat. The drill with Japan was carried out above the Sea of Japan, and saw the deployment of US

Indo-Pacific Command's (INDOPACOM) F-16 fighter jets and B-1 bomber aircraft, along with the Japan Air Self-Defense Force (JASDF) B-15 fighter aircraft.

The air training exercise between the US and South Korea saw participation of ROK Air Force's F-35A, F-15K and F-16 fighters, and the USAF's B-1B bombers.

On 20 February, DPRK fired two short-range ballistic missiles towards the East Sea with their strike ranges claimed to be about 340km and 390km.

Now the latest trilateral missile defense exercise has taken place for the first time after October 2022.

On 6 October 2022, a naval exercise was conducted that saw participation of ROKS Sejong the Great, Ticonderoga-class guided-missile cruiser USS Chancellorsville and Arleigh Burke-class guided-missile destroyer USS Benfold, part of the USS Ronald Reagan Carrier Strike Group, and Japan's destroyers JS Chokai and JS Ashigara.

<https://www.naval-technology.com/news/us-south-korea-japan-exercise/>



Thu, 23 Feb 2023

IDEX 2023: Saab Reveals New Self-protection System

Saab has revealed a new self-protection system called the Laser Warning Sensor-700 (LWS-700) at IDEX 2023, being held in Abu Dhabi from 20 to 24 February.

Speaking to Janes, Gavin Copeland, business development and marketing for naval electronic warfare at Saab Grintek Defence, said that the LWS-700 is a "laser warning sensor for the automated detection, classification, and identification of laser-based weapons".

The sensor has been developed over the past 3.5 years and is capable of classifying and identifying laser threats such as target designators or laser rangefinders, he said.

With a 1° bearing and elevation accuracy, the sensor is able to support countermeasures, specifically the deployment of hard-kill counter fires, he added.

This is a much-improved version of the LWS-310 – which forms part of the Land Electronic Defence Systems-50 (LEDS-50) MK2 – and offers a bearing accuracy of 7.5°.

The system weighs approximately 3.5 kg and is intended primarily for land and naval platforms.

A North American country has already acquired several units, he noted.

<https://www.janes.com/defence-news/defence/latest/idex-2023-saab-reveals-new-self-protection-system>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 23 Feb 2023

India Calls for Greater Cooperation with France in the Field of Clean Energy and Highlighted New Delhi's Plans for Green Transitioning to EVs and Hydrogen Energy

Dr. S. Chandrasekhar, Secretary, Ministry of Science and Technology, GoI inaugurates the Indo-French Workshop on Clean and Sustainable Energy Technologies (INFINITE) at CSIR – National Physical Laboratory in New Delhi

Using the Thar Desert as a site for solar power generation, India is estimated to generate up to 2,100 GW of solar energy: Dr S Chandrasekhar

Partnership with France and other G20 countries are required for green energy generation, storage and conversion, particularly green hydrogen, green ammonia, and energy storage infrastructures: Dr. N. Kalaiselvi

India calls for greater cooperation with France in the field of clean energy and highlighted New Delhi's plans for green transitioning to EVs and hydrogen energy. Indian renewable sector ranks 4th on the list of the world's most attractive renewable energy sectors and Solar energy is the most abundant source of renewable power in the country.

Inaugurating the Indo-French Workshop on Clean and Sustainable Energy Technologies (INFINITE) at CSIR – National Physical Laboratory in New Delhi, Dr. S. Chandrasekhar, Secretary, Ministry of Science and Technology, Government of India said that the Government in 2022 had set a target of installing 100 GW of solar energy. He added that using the Thar Desert as a site for solar power generation, India is estimated to generate up to 2,100 GW of solar energy.

Dr Chandrasekhar referred to another initiative of the Govt. of India and that is the National Biofuel Policy, which aims to achieve a 20% blending of ethanol in petrol and a 5% blending of biodiesel in diesel by 2030.

Dr Chandrasekhar pointed out that an area to focus upon is Carbon Capture and Storage and as estimated by NITI Aayog, theoretically, India has a total geological CO₂ storage capacity of 400-600 Gt considering the depleted oil and gas reservoirs, un-mineable coal seams, saline aquifers, basalts, etc. He said, the government has designed policies, programs, and a liberal environment to attract foreign investments to ramp up the country in the renewable energy market at a rapid rate. Department of Science and Technology is also interested in encouraging international collaborations on clean energy research. "I hope the process and technologies that

will be discussed in this workshop will be of enormous potential in mitigating the impact of climate change and reducing greenhouse gas emissions”, Secretary added.

In her address, Dr. N. Kalaiselvi Director General, CSIR and Secretary DSIR, said that India needs huge augmentation in the manufacturing of renewable energy technologies and infrastructures. She underlined that partnership with France and other G20 countries are required for green energy generation, storage and conversion, particularly green hydrogen, green ammonia, and energy storage infrastructures. India and France have long standing bilateral research co-operation specially to augment research on clean and renewable energies, she added.

Pr. Antoine Petit, CEO of the French National Centre for Scientific Research (CNRS) expressed appreciation for the strong partnership between the two countries and emphasized the importance of collaboration in achieving a sustainable energy transition through new bilateral programs.

Prof. Arvind Kumar Mishra, Director CSIR-CIMFR pointed out that this workshop is broadly focused to bring together academic and industrial experts from France and India to develop collaborations in the area of clean and sustainable energy. He said, both the sides need to identify specific research problems and objectives, and identify partners to develop new knowledge bases, joint IPs, and tangible outcomes in biomass energy, coal to methanol/ clean fuels, solar energy, hydrogen, energy storage, and carbon capture utilization and storage. We need to share our experiences, explore new ideas, and challenge ourselves to think differently.

The objective of the workshop is to bring together experts, researchers, policymakers, and industry leaders from both countries to exchange knowledge, ideas, and best practices on the development and deployment of clean and sustainable energy technologies. The workshop will feature a range of presentations and discussions on various topics related to Solar Energy, Hydrogen Energy, Carbon Capture Utilization & Storage, Electrochemical Energy Storage, and Clean Fuels.

The event has been jointly organized by CSIR – Central Institute of Mining and Fuel Research (CIMFR), Dhanbad, and the French National Centre for Scientific Research (CNRS), France and is being supported by the Indo-French Centre for the Promotion of Advanced Research (CEFIPRA).

Prof. Venugopal Achanta, Director, CSIR – NPL welcomed the guests, invitees, and delegates, and Prof. Arvind K. Mishra, Director, CSIR – CIMFR made the opening remarks.

Prior to the workshop, the bilateral meeting between DG, CSIR, and the CEO of CNRS also included discussions on strengthening cooperation in the field of clean energy research and development and formulation of new R&D programs between the two countries. The meeting was also graced by Directors of several CSIR Labs and other French Representatives from CEFIPRA, CNRS, CEA, and the Embassy of France in India, New Delhi.

The INFINITE workshop provides a platform for experts and stakeholders from both countries to exchange knowledge, identify areas of collaboration, and explore new avenues for cooperation in the field of clean and sustainable energy technologies. The event is expected to be successful, and it is hoped that the discussions and collaborations initiated during the workshop will lead to concrete outcomes in the near future. The bilateral workshop is being coordinated by Dr. R. Ebin Masto, Senior Principal Scientist, CSIR – CIMFR, India, and Dr. Abdelilah Slaoui, Deputy Research Director In-Charge of Energy, CNRS, France.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1901585>

THE TIMES OF INDIA

Fri, 24 Feb 2023

Leading Institutes to Take Part in Science Fiesta

From workshops of robotics and astrobiology to interaction with scientists from the Nuclear Power Corporation of India, the latest edition of the Science Fiesta has much to offer to students this year.

Held in collaboration with the department of science technology and environment, the event will be organised from February 25-28 as part of the National Science Day celebrations by the Goa Science Centre.

The highlight of the festival will be the exciting demonstration showing the effects of air pressure on objects and vacuum principles. Students will also get to experience the thrill of cold snow like dry ice at the Dry Ice Show and the science of the super cooled liquid nitrogen at the Liquid Nitrogen Show. They can also sign up for the water rocket workshop or take a nature walk organised by the Aranya Environment Research Organisation.

The festival will also feature a workshop on vermicomposting and Jeevamrut, a demonstration on fingerprinting and forensic science by Goa State Forensic Science Laboratory, a demonstration on fire by directorate of fire and emergency services, an astronomy slide show followed by sky observation programme and several other events.

Leading scientific and research institutions across the country will be putting up an exhibition of scientific findings and achievements of the country at this event. The exhibition will remain open for the public from February 25 to 28 between 10am to 5pm. Several competitions and programmes are being organised for students during the event.

The Science Fiesta will be inaugurated by professor Sunil Kumar Singh, director, National Institute of Oceanography, Goa in the presence of Satish Nayak, president, Association of Friends of Astronomy.

<https://timesofindia.indiatimes.com/city/goa/leading-institutes-to-take-part-in-science-fiesta/articleshow/98189412.cms>

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