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समाचार पत्रों से चयनित 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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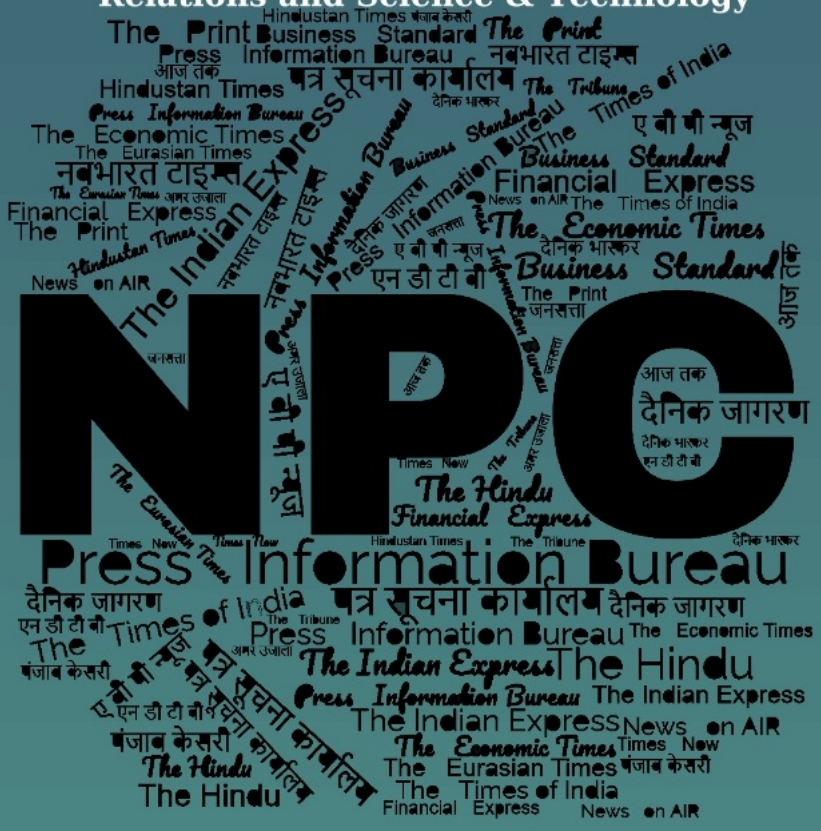

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अमर उजाला

Tue, 17 Dec 2024

Parliament: 'DRDO को अपने अनुसंधान का विस्तार करना चाहिए', युद्ध के खतरों पर संसदीय समिति ने जताई चिंता

अंतरराष्ट्रीय स्तर पर जारी संघर्ष ने हाइब्रिड युद्ध के खतरों को उजागर किया है। इसे देखते हुए एक संसदीय पैनल ने चिंता व्यक्त की। उन्होंने कहा कि डीआरडीओ को किसी भी युद्ध और सुरक्षा खतरों के खिलाफ युद्ध की तैयारी बढ़ाने के लिए अपने अनुसंधान एवं विकास प्रयासों का विस्तार करना चाहिए। मंगलवार को संसद में पेश की गई एक रिपोर्ट में समिति ने बताया कि 55 परियोजनाओं में से 23 निर्धारित समय के भीतर पूरी नहीं ह पाई।

रिपोर्ट में बताया गया, पिछले 10 वर्षों के दौरान 34161.58 करोड़ रुपये की 571 परियोजनाएं सफलतापूर्वक पूरी हुई। इस अवधि के दौरान 770.31 करोड़ रुपये की आठ परियोजनाएं चरणबद्ध तरीके से बंद कर दी गईं है। समिति ने अपनी रिपोर्ट में कहा कि डीआरडीओ को आईआईटी और आईआईएससी बेंगलुरु जैसे प्रमुख प्रौद्योगिकी संस्थानों में अपनी अनुसंधान प्रयोगशालाएं स्थापित करनी चाहिए। इससे रक्षा में रुचि रखने वाले छात्र और सैन्य प्रौद्योगिकी को आगे बढ़ाने के लिए प्रेरित किया जा सकता है।

डीआरडीओ को अपने अनुसंधान को बढ़ाना चाहिए

समिति ने शिक्षा और उद्योगों के साथ अनुसंधान जुड़ाव के लिए डीआरडीओ में उपकरणों पर संतुष्टि व्यक्त की। उन्होंने डीआरडीओ से अपने अनुसंधान को आगे बढ़ाने के लिए एआई और रोबोटिक्स जैसे प्रौद्योगिकी अनुप्रयोगों के नए क्षेत्रों पर अधिक ध्यान केंद्रित करने का आग्रह किया। इसके अलावा समिति का मानना है कि अंतरराष्ट्रीय क्षेत्र में जारी संघर्ष ने काफी हद तक हाइब्रिड युद्ध के खतरों को उजागर किया है। इस पर ध्यान देने की आवश्यकता है।

समिति ने कहा कि डीआरडीओ को शिक्षा और उद्योग के सहयोग से अपने अनुसंधान और विकास प्रयासों को और व्यापक बनाना चाहिए। इसमें हाइब्रिड काइनेटिक और नॉन काइनेटिक युद्ध क्षेत्रों के साथ–साथ ड्रोन रोधी क्षमताओं को शामिल करना चाहिए।

समिति का मानना है कि डीआरडीओ, जो कि देश का सबसे उन्नत अनुसंधान संस्थान है, को दूर–दराज के क्षेत्रों में सौर और पवन ऊर्जा जैसे अक्षय ऊर्जा के क्षेत्र में दाखिल होना चाहिए ताकि सीमाई क्षेत्रों में तैनात सशस्त्र बल के जवानों की रोजमर्रा की जरूरतों के लिए ऊर्जा सुरक्षा सुनिश्चित की जा सके। समिति को इस बारे में उठाए गए कदमों की जानकारी चाहिए होगी।

https://www.amarujala.com/india-news/drdo-should-expand-its-research-parliamentary-committee-expressed-concern-news-in-hindi-2024-12-17

THE ECONOMIC TIMES

Tue, 17 Dec 2024

DRDO should expand R&D efforts to include hybrid, kinetic, non-kinetic warfare areas: Parliamentary panel

Underlining that the ongoing conflict in the international arena has revealed the "hazards of a hybrid warfare", a parliamentary panel has recommend that the DRDO should expand its R&D efforts to enhance combat readiness against any non-conventional warfare and security threats. In its report tabled in Parliament on Tuesday, the committee has noted "with concern that out of 55 projects, 23 were not completed within the stipulated time".

"Although, 571 projects worth Rs 34161.58 cr have been successfully completed and closed during the last 10 years (1 Jan 2012 -- till date), with respect to projects which were partially successful or unsuccessful, eight such projects worth Rs 770.31 cr were stage closed during this period," the report said.

The report of the Parliamentary Standing Committee on Defence is titled -- 'Action Taken by the Government on the Observations/ Recommendations contained in the Forty-Second Report (17th Lok Sabha) of the Standing Committee on Defence on the subject -- A Review of the Working of the Defence Research and Development Organisation (DRDO)'.

The committee in its report recalled that in its 42nd report (17th Lok Sabha), it was of the opinion that the DRDO should establish their research laboratories in premier institutes of technologies such as the IITs and IISc, Bengaluru so that students having interest in defence and military technology can be motivated to undertake further research in the area.

In this regard, the defence ministry has submitted that in response to the recommendation of the committee, the DRDO has instituted various DRDO Industry Academia-Centre of Excellence (DIA-COE) in various IITs, IISC and central universities across the country for research engagement with academia and industries, it said.

The committee said it expresses its "satisfaction at the extant mechanism" in DRDO for research engagement with academia and industries.

It further said that the panel in its "original report had also urged the DRDO to focus more on new and emerging areas of technology applications such as artificial intelligence (AI) and robotics" for furthering their research-base and also exploring the possibility of AI's application in various systems and sub-systems developed by them."

Further, the committee feel that the ongoing conflict in the international arena has revealed, to a great extent, the hazards of a hybrid warfare, with both kinetic and non-kinetic operations. Keeping in view such drastic transformation in the warfare technology, the Committee feel that there is a need for fervid focus on research and development in the field of hybrid warfare, especially kinetic and non-kinetic warfare," the report said.

"Therefore, the committee recommend that the DRDO, in collaboration with academia and industries, should further broad-base their R&D efforts to include areas such as hybrid, kinetic and non-kinetic warfare as well as anti-drone capabilities including sea drones and interceptive drones by according highest priorities in order to enhance our combat readiness against any non conventional warfare and security threats," it added.

Under the 'Recommendation (Para No. 7)', the panel shared its earlier recommendation and the reply of the ministry.

The ministry in its action taken reply has stated as under -- "DRDO plan to expand its research activities in the areas of quantum technologies, artificial intelligence, cognitive technologies, smart materials, asymmetric technologies, terahertz, directed energy systems, high power electromagnets, etc.

"The committee said it has been given to understand that the armed forces personnel "face certain difficulties" in the remote and far-flung border areas owing to their dependence on conventional sources of energy only.

"The Committee feel that DRDO, being one of the most advanced research organisation, should explore avenues for tapping new and renewable sources of energy such as solar and wind in those far-flung areas to ensure energy security for the armed forces personnel deployed in the remotest border areas for meeting their obvious daily needs. The Committee would like to be informed of the measures undertaken in this regard," the report added.

https://economictimes.indiatimes.com/news/defence/drdo-should-expand-rd-efforts-to-include-hybrid-kinetic-non-kinetic-warfare-areas-parliamentary-panel/articleshow/116404770.cms?from=mdr

The Indian EXPRESS

Tue, 17 Dec 2024

Cyber defence, deterrence key for India's security: DRDO chief at IIT-Bombay Techfest

Defence Research and Development Organisation (DRDO) Chairman Dr Samir V Kamat Tuesday said that as India ranks among the countries most vulnerable to cyberattacks, the organisation is working on cyber defence initiatives.

Dr Kamat was speaking at Techfest, the annual science and technology festival of the Indian Institute of Technology, Bombay, which started Tuesday.

Dr Kamat said, "India is among the highest attacked countries in the world when it comes to cyberspace. And especially in the military domain, it is going to be a decisive edge." The DRDO chief elaborated on the importance of cyber defence, which includes cyber deterrence.

"You have to have the capabilities like you have in our strategic nuclear domain. You have to have deterrence capabilities so that people don't attack. So both cyber defence and cyber deterrence are going to play a key role. This is especially where young people can contribute significantly," he said.

Emphasising the need for a fresh approach to a wide range of technologies, Dr Kamat said the DRDO has established new units in areas such as artificial intelligence, asymmetric technology, smart materials, quantum technology and cognitive sensor technology, each headed by young scientists under the age of 35.

Dr Kamat also said India has a very low rate of researchers per million population compared to countries such as Singapore, Sweden, Denmark and Israel, insisting that research work needs to be enhanced and encouraged in the country.

To promote more research, particularly in defence, the DRDO plans to fund up to Rs 50 crore under industry collaborations, providing startups and micro, small and medium enterprises with opportunities to access this funding.

As IIT Bombay's three-day Techfest began, an impressive line-up of speakers is scheduled to speak at the festival. In addition to lecture series, exhibitions of international and in-house innovations have become crowd pullers, as in previous years.

Among other notable speakers on the first day of the Techfest lecture-series was Jeet Adani, son of Director of Adani Airport Holdings Ltd. and son of Adani Group's chairman Gautam Adani.

Emphasising the role of technology in navigating the evolving landscape, Adani said, "I see technology as the way forward, the only way forward." He stressed on the importance of balancing technology's benefits with its risks, urging India to embrace AI and digital transformation to drive national growth.

In his address, Adani appreciated the volume of contribution of IIT Bombay into the sector of technology with innovations and by giving the world intelligent minds who brought changes across industries with technology.

https://indianexpress.com/article/cities/mumbai/cyber-defence-security-drdo-iit-bombay-techfest-9730039/?ref=cities_hp

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Tue, 17 Dec 2024

Raksha Mantri chairs Consultative Committee meeting for Ministry of Defence on roles & functions of new DPSUs

These new DPSUs will carry forward modernisation, indigenisation & set new dimensions by incorporating world class technologies: Shri Rajnath Singh

A meeting of Consultative Committee for the Ministry of Defence (MoD) under the chairmanship of Raksha Mantri Shri Rajnath Singh was held in New Delhi on December 17, 2024. The roles and functions of the new DPSUs, created post corporatisation of erstwhile Ordnance Factory Board, were deliberated upon during the meeting. The committee members were apprised on the financial

figures, modernisation, capital expenditure, exports, new products developed and ongoing R&D projects.

Raksha Mantri appreciated the efforts taken by the new DPSUs in indigenisation of critical products, modernisation of production facilities and promotion of MSMEs. He appreciated the fact that post corporatisation, the new DPSUs have shown improvement in productivity and quality. There has been good progress in the sales and profit of these DPSUs in a very short span of time, he added.

Shri Rajnath Singh exuded confidence that the new DPSUs will carry forward modernisation & indigenisation, and will set new dimensions in quality, turnover, profitability and other financial parameters by incorporating world class technologies. “Our new DPSUs will make India ‘Aatmanirbhar’ in the field of defence production,” he said.

On the concerns and suggestions of some of the committee members on certain HR-related issues within the new DPSUs, Raksha Mantri assured them that all issues emanating from the corporatisation of DPSUs are being addressed adequately in consultation with all the stakeholders. He appreciated the suggestions, and said that these would be examined for implementation.

Raksha Rajya Mantri Shri Sanjay Seth, Chief of Defence Staff General Anil Chauhan, Secretary (Defence Production) Shri Sanjeev Kumar and other senior officers of MoD were present in the meeting.

https://pib.gov.in/PressReleasePage.aspx?PRID=2085275

Press Information Bureau
Government of India

Ministry of Defence

Tue, 17 Dec 2024

Keel Laying Of Sixth Ship (By 528, Magdala) Of ASW SWC Project At CSL, Kochi

Keel Laying of the sixth ship (BY 528, Magdala) of the Anti-Submarine Warfare Shallow Water Craft (ASW SWC) project was undertaken in presence of RAdm Satish Shenai, CSO (Training), Southern Naval Command on 17 Dec 24. Senior officials of Indian Navy and CSL were also present for the ceremony. With almost all major and auxiliary equipment/ systems sourced from indigenous manufacturers, these ships showcase the GoI initiative of “Aatmanirbhar Bharat”. This milestone, within months of the launching of the fourth and fifth ASW SWC ships at CSL in Sep 24, demonstrates the ‘Make in India’ capability of the Indian Shipyards.

Contract for building eight ASW SWC ships was awarded to Cochin Shipyard Limited by the Ministry of Defence on 30 Apr 19. The ships known as the ‘Mahe’ class, will be equipped with indigenously developed, state-of-the-art underwater sensors, and are envisaged to undertake anti-submarine operations in coastal waters as well as Low Intensity Maritime Operations (LIMO) and Mine Laying Operations.

The first ship of the project is planned to be delivered in early 2025. Besides enhancing Indian Navy’s Anti-Submarine Warfare capabilities, the high indigenous content on these ASW SWC

ships is also generating large scale employment and capability enhancement of Indian Manufacturing Units.

https://pib.gov.in/PressReleasePage.aspx?PRID=2085349

THE ECONOMIC TIMES

Tue, 17 Dec 2024

Preparing for future warfare, Indian defence forces looking to expand space assets, manpower

Preparing for future warfare, the Indian defence forces are aiming to expand their assets in space and bolster the strength of the agencies responsible for these tasks.

A detailed presentation was recently made by the Department of Military Affairs (DMA) to senior Defence Ministry functionaries in the presence of service chiefs and key stakeholders from the Indian Space Research Organisation (ISRO) and the Defence Research and Development Organisation (DRDO).

Government officials told that the defence forces are focusing on enhancing the number of space-based assets and the necessary ground infrastructure to support them.

Plans to strengthen the Defence Space Agency and other related organisations come shortly after the government approved the space-based surveillance project, under which 52 satellites will be launched for surveillance, communication, and other strategic objectives. Both government and private sector agencies will play a role in this initiative.

The DMA, led by the Chief of Defence Staff (CDS), oversees the Defence Space Agency, which will manage these new responsibilities as preparations intensify for space-centric warfare.

The Defence Space Agency is also tasked with increasing the number of assets in space while ensuring their protection from all types of threats.

Enhanced satellite surveillance coverage will significantly improve India's monitoring capabilities, particularly in areas of interest along the Line of Actual Control with China and borders with Pakistan.

To carry out the increased roles and responsibilities, the forces are now looking to significantly expand the strength of the DSA and other related agencies working in this domain.

The CCS had approved two agencies for working in the field of space for creating all types of defensive and offensive capabilities.Recently, CDS Gen Anil Chauhan underscored the growing importance of space, describing it as increasingly "congested, contested, competitive, and commercial."

He urged military leadership to secure national interests in space by fostering innovation and developing cutting-edge technologies and state-of-the-art systems in collaboration with all stakeholders.

https://economictimes.indiatimes.com/news/defence/preparing-for-future-warfare-indian-defence-forces-looking-to-expand-space-assets-manpower/articleshow/116406579.cms

THE ECONOMIC TIMES

Tue, 17 Dec 2024

IAF squadron shortage being addressed through multi-pronged approaches: Parliamentary panel

The number of IAF fighter squadrons has reduced in recent years due to phasing out of ageing variants of the MiG-21, the MiG-23 and the MiG-27 aircraft, and the "shortage" is being addressed through "multi-pronged" approaches to minimise the impact, according to a parliamentary panel report.

In the report tabled in Parliament on Tuesday, the Standing Committee on Defence also said the Ministry of Defence has informed it of the issue regarding "incidences of spying" surfaced in the Indian Air Force (IAF) and the action taken.

"That four cases have surfaced in the last five years. All the involved personnel have been dismissed from the IAF. Amongst them, one of the cases has been handed over to civil police -- he is undergoing trial in a civil court," the ministry said.

The report is titled 'Second Report (18th Lok Sabha) of the Standing Committee on Defence on Demands for Grants of the Ministry of Defence for the Year 2024-25 on -- Army, Navy, Air Force, Joint Staff and Ex-servicemen Contributory Health Scheme (demand nos. 20 and 21)'.

"On the issue of depletion in squadron strength, the ministry apprised the Committee that the number of fighter squadrons has reduced in recent years due to the phasing out of ageing variants of MiG-21, MiG-23 and MiG-27 aircraft. The shortage in number of fighter squadrons is being addressed through multi-pronged approaches to minimise the impact," the report said.

The panel was also informed about the combat capabilities of the homegrown Tejas -- a single-engine, fourth-generation, multi-role, light combat aircraft (LCA).

"IAF has received and operationalised two squadrons of Tejas Mk1 ac (aircraft). The aircraft is being employed for operational roles and participated in the recently concluded international exercise Tarang Shakti," the ministry told the panel.

The IAF has contracted for procurement of 83 LCA Mk-1A and the deliveries were planned to commence from February 2024 onwards. Tejas Mk-1A programme has been "delayed" due to design and development issues. HAL (Hindustan Aeronautics Limited) has been asked to increase the production of Tejas, it said."

The IAF has also progressed as case for procurement of additional 97 LCA Mk-1A aircraft for which AoN was accorded and RFP was issued," according to the report, quoting the ministry. "The CNC is under progress. With these acquisitions, IAF will have 220 LCA Mk-1 & Mk-1A ac."

In addition, Tejas Mk-2 which is under design and development, will be a "day and night capable", all-weather multi-role combat aircraft with adequate self-defence capability to operate in a "dense and hostile AD environment", the report said."

The aircraft would be a potent platform designed around a higher thrust engine, better performance metrics featuring an integral Unified Electronic Warfare Suite (UEWS) for survivability, new Digital Flight Control Computer (DFCC) and improved maintainability compared to the LCA Mk 1/1A. LCA Mk 2 is intended to replace Mirage-2000, MiG-29 and Jaguar aircraft of the IAF," it added.

The Tejas aircraft, designed by the Aeronautical Development Agency in collaboration with the Aircraft Research and Design Centre of HAL, is manufactured by HAL.It came from the LCA programme, which began in the 1980s to replace India's ageing MiG-21 fighters.

"IAF has operationalised two squadrons, including 32 fighters LCA Mk-1 and four twin seater ac. Four more twin seater ac are expected to be inducted shortly. The cost for LCA Mk-1 aircraft IOC & FOC configuration (20 ac each) is Rs 5,077.95 crore and Rs 6,804.21 crore respectively. The IAF has contracted 83 x LCA Mk-1A for Rs 36,468.63 crore excluding taxes and duties," the ministry told the panel, according to the report.

On squadron strength, a representative of the IAF submitted, "...This will be addressed in the long run by the timely induction of MRFA and LCA Mark II. Critical combat enablers like the airborne early warning aircraft, flight refuellers and special electronic intelligence and surveillance are an integral element of modern-day combat."

In the report, it was also mentioned that nine IAF aircraft accidents took place in 2021-22 and eleven in 2018-19.

https://economictimes.indiatimes.com/news/defence/iaf-squadron-shortage-being-addressed-through-multi-pronged-approaches-parliamentary-panel/articleshow/116407651.cms

THE ECONOMIC TIMES

Tue, 17 Dec 2024

Indonesia shows interest in collaborating with India in defence tech sector

Indonesia has shown keen interest in collaborating with India in the defence technology domain as Navy Chief Admiral Dinesh K Tripathi held wide-ranging talks with top military brass of the Southeast Asian nation on boosting strategic ties. Ways to forge bilateral collaboration in the area of defence technologies figured prominently in a meeting between Indonesian Defence Minister Sjafrie Sjamsoeddin and Admiral Tripathi.

The Navy chief is on a four-day visit to Indonesia from Sunday.

The two sides discussed strengthening bilateral cooperation and various aspects of defence collaboration, including joint exercises, the Indonesian defence ministry said.

It said Admiral Tripathi explained that India is developing indigenous technologies to support the advancement of its Navy and Sjafrie appreciated the rapid progress in the domain.

The minister expressed his "enthusiasm for working together to improve Indonesia's defence technology," it said.

Discussions were held on the expanding India-Indonesia defence relations with a focus on measures to further consolidate maritime cooperation, including operational engagements and joint training initiatives, the ministry said.In the meeting, Tripathi highlighted potential avenues for defence industrial collaboration between the two sides.

The visit of Admiral Tripathi underscores the strong maritime relations between the two countries conforming to the shared vision in the Indo-Pacific, the Indian Navy said last week.

Indonesia is a key member of the 10-nation ASEAN (Association of Southeast Asian Nations) grouping.

The overall strategic relations between India and Indonesia have been on an upswing but both sides are of the view that there is huge potential for expansion of the ties.

https://economictimes.indiatimes.com/news/defence/indonesia-shows-interest-in-collaborating-with-india-in-defence-tech-sector/articleshow/116407763.cms

THE ECONOMIC TIMES

Tue, 17 Dec 2024

CAG report flags 'persistent delays' in finalisation of Court of Inquiry proceedings in Army

A CAG report for the year ending March 2021 has flagged "persistent delays" in the finalisation of the Court of Inquiry proceedings in the Army, and cited that out of 95 cases involving financial loss in three commands, stipulated timeline for assembly and completion of CoI was met "only in 46 and 25 cases".

The report of the Comptroller and Auditor General of India on Union government (Defence Services-Army) was presented in Parliament on Tuesday.

This report contains the results of audit of the transactions of Ministry of Defence pertaining to the Department of Defence, Army, Military Engineer Services, Border Roads Organisation, and Defence Research and Development Organisation in 2020-21, as per the statement on it issued by the CAG.

It also audited the functioning of the Remount and Veterinary Services and Utilisation of Animal Transport Units.

The Remount and Veterinary Corps (RVC), headed by Director General Remount Veterinary Services (DG RVS), is responsible for breeding, rearing, training and managing health of the entire equine and canine population in the Indian Army.

"Audit covered the period from 2018-19 to 2020-21 which included the period of 13th Army Plan (2017-22). Audit observed that the 13th Plan for RVS did not include capability development and modernisation aspects," the statement said.

The audit was also on 'Court of Inquiry in Indian Army', 'Raising of Porter Companies in Eastern Command', and 'Management of Water Supply by Military Engineer Services', among others.

"There were persistent delays in finalisation of the CoI (Court of Inquiry) proceedings in Indian Army. Out of 95 cases involving financial loss in the three Army Commands (Central Command, Eastern Command and Western Command), stipulated timeline for assembly and completion of CoI was met only in 46 and 25 cases respectively," the CAG said in the statement.

In 11 cases, time taken in completion of CoI was "more than two years and even up to 11 years," it flagged.

"In 10 CoIs related to fire incidents where the Command HQs were authorised to convene a CoI, the convening order was issued by an authority lower than the Command HQs. The terms of

reference (ToR) which lay down the scope of investigation for a CoI did not have specific mention of fixation of responsibility and apportioning of blame/loss in 29 cases," the statement said.

"Further, in 28 out of these 29 cases, there was no mention of the relevant Army Rules, Orders, Instructions, etc., and in 13 of these 29 cases, no mention was made of assessing the extent of loss and damage to life/property," the audit body said.

The statement further said that in 95 cases, CoI assessed "financial loss of Rs 50.76 crore".

"The financial losses of Rs 7.12 crore were regularised in respect of 43 cases (April 2022). However, in 52 cases involving financial loss of Rs 43.64 crore, the information relating to regularisation of loss by Competent Financial Authority was not available," the statement said.

"In 57 out of 95 cases, the required documents relating to intimation of details of loss to accounting authorities, that is, Controllers of Defence Accounts (CsDA), were not available in the documents furnished. As such, Audit was unable to ascertain whether the loss was reported to CsDA either initially or finally after investigation," it added.

In 20 out of 38 remaining cases, where the Commands/Units furnished details of financial losses to the concerned CsDA after completion of CoI, "the time taken in reporting of losses to CsDA ranged between three months and more than two years," it flagged.

On the functioning of the Remount and Veterinary Service, it further said that "three out of the six short-term training goals" as per the Technical Training Directive of RVS, related to import of frozen semen of proven elite stallions from European countries to upgrade the sporting potential of Army equines; training of raptors to hunt down drones or surveillance devices; and training of local breeds of dogs to assess their suitability for employment as military working dogs, were "either not achieved or under-achieved".

On the audit related to the raising of Porter Companies in Eastern Command, the audit body said the Ministry of Defence sanctioned (June 2019) raising of nine Porter Companies (Coys) in the area of responsibility (AoR) under the Headquarters Eastern Command (HQ EC) for the years 2019-20 and 2020-21 at a cost of Rs 180.85 crore and for the year 2021-22, at a cost of Rs 93.78 crore.

"Out of total 12,000 porters hired under the Porter Coys raised between 2019-20 and 2021-22, Corps HQ allotted 11,297 porters to ETFs/Engineer Regiments. Division HQ further allotted only 7,938 porters to ETFs/Engineer Regiments. As such, 3,359 porters were deployed in units other than Engineer Regiments. Out of 7,938 porters deployed, the utilisation certificates rendered by the Engineer Regiments were only in respect of 4,634 porters," it said.

The report also flagged "unwarranted expenditure due to delay in termination of bandwidth services" by the Canteen Stores Department.

The report also mentions cases of avoidable expenditure of Rs 3.20 crore on account of not following the IRC specification in road markings, and sanctioning similar nature of works under different code heads.

https://economictimes.indiatimes.com/news/defence/cag-report-flags-persistent-delays-in-finalisation-of-court-of-inquiry-proceedings-in-army/articleshow/116409216.cms

THE ECONOMIC TIMES

Tue, 17 Dec 2024

Lockheed forms subsidiary to help defense companies adopt AI

Lockheed Martin said on Monday it had formed a subsidiary that will help U.S. defense companies incorporate artificial intelligence into their operations.Companies across sectors have leaned more on AI over the past few years to help optimize their workflow. However, defense companies have remained cautious given the sensitive data required to train models in the sector.

Earlier this month, privately held defense tech company Anduril Industries partnered with ChatGPT-maker OpenAI to develop and deploy advanced artificial intelligence solutions for national security missions.

Lockheed said the subsidiary, Astris AI, will also focus on enabling the adoption of AI solutions in some commercial applications.The subsidiary will be headed by Astris AI's chief revenue officer, Donna O'Donnell, who has previously overseen a team at Xerox covering automation and generative AI.

Industry executives say President-elect Donald Trump's planned U.S. government efficiency drive involving Elon Musk could lead to more joint projects between big defense contractors and smaller tech firms in areas such as artificial intelligence, drones and uncrewed submarines.

https://economictimes.indiatimes.com/tech/artificial-intelligence/lockheed-forms-subsidiary-to-help-defense-companies-adopt-ai/articleshow/116390390.cms

THE ECONOMIC TIMES

Tue, 17 Dec 2024

A rapidly changing international landscape has stabilised India-China ties

Although both Beijing and New Delhi have always claimed their bilateral relationship is not affected by anything outside it, we know from history that the world setting impacts the relationship in profound ways.

Since the 1950s, the larger geopolitical context has shaped how the India-China relationship has played out in practice. We have seen it all. There have been phases of détente, indifference, cold war, controlled competition, modus vivendi, peaceful competition and even collaboration.

What we learn from this history is that periods of great uncertainty and major international powershifts have persuaded both countries to stabilise ties, despite their differences and disputes. Two previous phases stand out.

Take, for instance, the early 1950s when the post-second world war system of international relations had yet to settle in Asia. In their own independent ways, we saw both India and China pursue larger roles to cushion the escalating Cold War from undermining Asian security as well as attempting some form of a modus vivendi to keep ties normal.

Another turning point was the end of the Cold War in 1989 and then the onset of unipolarity after 1991. This unprecedented powershift again saw India and China de-escalate their previous border tensions and reach another modus vivendi to normalise ties.

In each instance, both sides benefited from the stabilization whether it was achieving a stable and peaceful periphery, geopolitical security, domestic economic modernization or national and regime stability.

Remembering this backdrop is useful, because the present era resembles another one of those moments or turning points in the international landscape.

What can we say about the present era?

The first feature is the ongoing rapid transition to multipolarity and a changing balance of power. As this power transition is playing out, several regions such as Europe and the Middle East are witnessing intense political and military conflicts because the previous status quo, that is, the security architecture and equilibrium has been shattered. This is because the US and its allies sought to unilaterally expand their sphere of influence beyond all sustainable limits leading to fierce resistance from other great powers. The ongoing struggle between major powers for a new security framework in those regions is likely to play out over several years.

Ironically, when set against these conflicts and uncertainty, the India China equation looks remarkably calm in contrast, and is one of the main reasons why Xi Jinping and Narendra Modi have chosen to stabilise ties. The two leaders have stabilized ties not only to preempt the expansion of great power conflicts on their overlapping peripheries but also because both sides now have a deeper interest in shaping what the new international landscape will look like in the future.

Both sides have a common interest in building the normative texture of the multipolar order. Will it be inclusive and accommodate many non-western civilizational states like Iran, Russia, China, India and several others?

The present era is historically unprecedented because we are not merely witnessing a material power transition or a change in the balance of power but also a shift from a western civilization-dominated ideological system to a multi-civilizational plural ideologies based international system.

In the realm of ideas on world order, India and China have common ground to exchange their visions and co-create norms that also find a large audience in the Global South, which is where the international community of the future will be located.

The second feature is domestic politics in the US and more broadly in the collective West. The domestic political shifts suggest that the US is not likely to restore its historical role in shaping a new world order. This is not to suggest a US retreat is inevitable or even likely. But rather that US foreign policy under Trump and his successors will focus primarily on national power maximization, control over US political-military alliances, and adopting economic, trade and investment strategies that advance the interests of the domestic US economy and those international supply chains where the US and its allies dominate the innovation and production process.

The proverbial ‘fence’ will be much higher for non-allied states whether it is India, China or most of the Global South. We are staring at the prospect of a US and collective west that will play less of a role in world order and globalization and more acutely focus on the development of material power within the western alliance system.What does this mean for China and India?

To a large extent, both countries were passively relying on the open international order shaped by the US in previous decades to advance their economic interests, particularly in the post-Cold War

era. That framework was becoming outdated even a decade ago. The present political shifts within the West has brought forward the time frame by atleast a decade if not more.

The third feature is the crisis in globalization that is impacting not only on the national development interests of India and China but also the roles they play to help steer the geoeconomic landscape in a fresh direction.

The overwhelming demand from the Global South is for an open economic order as well as a more responsive framework and practice of globalization. The neoliberal model of globalization has failed. What most of the developing world including India is now seeking is more relevant and more accessible public goods, public goods and the commons that cannot be weaponized by any single major power, better commercial returns for a country's natural resources and strategic commodities, more opportunities for industrialization and innovation, fair access to international production supply chains that enable domestic value addition and capacity building including human resource exchanges. The latter is a vital national objective for India who seeks to modernize its industrial-manufacturing base in collaboration with China and other leading economies.

By its essence, a reformed interconnected economic order must emerge via a multilateral process involving many diverse economies with different strengths and competitive advantages. For the moment, BRICS + is certainly the most promising inclusive institutional framework that is engaged in such an order building process. But much more needs to be accomplished if the next chapter of globalization is to be written by and for the Global South.

Unlike the US, China and India cannot afford to retreat or abdicate their responsibility in shaping an inclusive and interconnected multipolar world.

https://economictimes.indiatimes.com/news/defence/a-rapidly-changing-international-landscape-has-stabilised-india-china-ties/articleshow/116391595.cms

THE WEEK

Tue, 17 Dec 2024

Delhi or Beijing, first port of call is a signal of intent for South Asian leaders

Besides inking a slew of agreements, the ongoing visit of Sri Lankan President Anura Kumara Disanayaka, his first ever to any foreign country after assuming the reins of power in the island nation, is important for two main reasons.

One, the decision to visit India first and not China is a statement of his intent to maintain a fine balance in his ties with the two Asian giants. After New Delhi, the Lankan President is scheduled to visit Beijing in the beginning of 2025.

Interestingly, the first visit of Nepal Prime Minister K.P. Sharma Oli after assuming power in Kathmandu was to China where on December 3, he signed a nine-point agreement mainly relating to enhancing connectivity, infrastructure, spurring development and increasing trade.

Both Nepal and Sri Lanka are already signatories to China's ambitious Belt and Road Initiative (BRI).

The second is President Disanayaka's declaration after meeting PM Narendra Modi on Monday that Sri Lanka won't allow its territory to be used against India. "I assured the Indian leader that Sri Lanka will not permit its territory to be used in any manner inimical to the security of India as well as towards regional stability," he had said.

A joint statement issued on Monday by the two leaders said: "India being Sri Lanka's closest maritime neighbour, President Disanayaka reiterated Sri Lanka's stated position of not permitting its territory to be used in any manner inimical to the security of India as well as towards regional stability."

Disanayaka also expressed his gratitude for India's assistance of about $4 billion in 2022 when Colombo was going through a period of economic doldrums.

With defence collaboration between nations being seen as a key parameter of a good relationship, the military pacts agreed to between India and Sri Lanka are of paramount importance.

A notable point is the agreement to explore the possibility of concluding a framework agreement on defence cooperation which has been specified as cooperation in hydrography, providing Sri Lanka with military equipment and enhancing its defence capabilities besides intensifying collaboration through joint exercises, maritime surveillance, and defence dialogue and exchanges.

Significantly, President Disanayaka has also requested India's support for Sri Lanka's application to become a member of the BRICS, a multilateral grouping that has Russia and China, among others, as members.

With Indian foreign policy suffering acknowledged reverses due to domestic politics in Bangladesh among others, India should try its best to improve its strategic standing in its neighbourhood—as in the case of Maldives where Indian diplomacy came back strongly after a regime change, whether India's influence grows in Sri Lanka is a test that time will tell.

https://www.theweek.in/news/defence/2024/12/17/delhi-or-beijing-first-port-of-call-is-a-signal-of-intent-for-south-asian-leaders.html

THE WEEK

Tue, 17 Dec 2024

LCA Tejas MkII fighter jets latest news: IAF likely to form in-house team for upgrades

Even as the Indian Air Force (IAF) is awaiting the delivery of single-engine, multirole combat aircraft HAL Tejas MkII, which is likely to happen by 2029-30, the IAF is looking at creating an in-house team to manage feedback, bring in changes and upgrades for the fighter jets whenever necessary.

According to IDRW, this is intended at reducing dependency on Hindustan Aeronautics Limited (HAL)—which in collaboration with the Aeronautical Development Agency (ADA) is developing the fighter jets—for software-related updates and modification.

The in-house team is expected to help streamline the process of software upgrades for Tejas MkII, reduce costs and ensure that the latest variant of the fighter jet, when inducted into the IAF fleet, is

regularly updated. Currently, the IAF is dependent on HAL for any such upgrades and this is also leading to development costs.

The Aircraft Systems and Testing Establishment (ASTE) of the IAF, which is responsible for the evaluation and testing of aircraft and airborne systems is expected to play a major role in this initiative.

The in-house unit would assess feedback from operational squadrons and implement necessary enhancements.

Tejas MkII, also known as the Medium Weight Fighter (MWF) is a significant upgrade over the earlier Tejas MkI and is designed to replace older aircraft of the IAF, including the Dassault Mirage 2000, and Mikoyan MiG-29.

It has been described as a 4.5-generation machine with a 21st-century look and is developed as an advanced stealth version of the Tejas, to be used for air-to-air combat, interception, ground attack, and air defense.

https://www.theweek.in/news/defence/2024/12/17/lca-tejas-mkii-fighter-jets-latest-news-iaf-likely-to-form-in-house-team-for-upgrades.html

Tue, 17 Dec 2024

No place in the world is safe: Russian Commander claims its missiles can strike any corner of the planet

Colonel General Sergey Karakayev, the commander of Russia's Strategic Missile Forces, boasted about the capabilities of Moscow's missile power saying Russia's intercontinental ballistic missiles (ICBMs) can reach any place in the world.

According to news agency TASS, he said the ICBMs are designed specifically to target any territory, in any corner of the planet.

In an interview dedicated to the Strategic Missile Forces Day on December 17 to the newspaper Krasnaya Zvezda, General Karakayev said, "In terms of range, there is no place our missiles cannot reach."

"Such maximum-range launches have been conducted in modern Russia to evaluate the correspondence of their characteristics to the pre-established requirements. They are carried out in the waters of the Pacific Ocean. According to the tactical and technical objectives of the Russian defense ministry, this is a necessary stage of the new intercontinental ballistic missiles' testing," he was quoted as saying.

Further, he announced that the missile launches at maximum range are planned by the forces as part of state flight tests of advanced missile systems.

Noting that the missile systems of the mobile group of the Russian Strategic Missile Forces have been completely updated, he said, “The planned rearmament of the Strategic Missile Forces' military compounds and units has led to an 88 per cent share of modern missile weapons and provided the Strategic Missile Forces grouping with new capabilities to perform tasks on nuclear deterrence.”

This figure has already reached 100 per cent in the mobile group of the Strategic Missile Forces, he added.

https://www.theweek.in/news/defence/2024/12/17/no-place-in-the-world-is-safe-russian-commander-claims-its-missiles-can-strike-any-corner-of-the-planet.html

THE HINDU

Wed, 18 Dec 2024

INS Nirdeshak to be commissioned at Vizag Naval Dockyard today

The Indian Navy's state-of-the-art hydrographic survey vessel, INS Nirdeshak, will be commissioned at the Naval Dockyard today.

Union Minister of State for Defence Sanjay Seth will be the chief guest of the event at Naval Dockyard.

According to an official release here from the Eastern Naval Command on Tuesday, INS Nirdeshak would not only enhance the national survey fleet but also cement India's reputation as a trustworthy partner in the Indian Ocean Region.

INS Nirdeshak is fitted with cutting-edge hydrographic survey technologies, including Multi-Beam Echo Sounder (MBES), an Autonomous Underwater Vehicle (AUV), a Remotely Operated Vehicle (ROV) and Advanced Communication Systems facilitating seamless communication with allied nations.

These sophisticated capabilities position INS Nirdeshak as a key asset for furnishing substantially improved and augmented hydrographic data, characterized by superior precision, enhanced resolution, standardisation and quality assurance meeting the rigorous benchmarks and standards of IHO thereby contributing to global maritime safety and cooperative regional engagement. The extended long-endurance capabilities of INS Nirdeshak will enhance its operational reach, enabling the vessel to access and operate in strategic and far reaches of the Indian Ocean Region and remote waters surrounding the Maldives, Seychelles etc thereby meeting the hydrographic needs of these island nations.

Hydrographic surveys are vital for enhancing maritime safety by identifying navigational hazards, updating nautical charts, and supporting the global shipping industry. By providing these services to regional states, India reinforces its role as a preferred maritime partner.

The commissioning of INS Nirdeshak will strengthen India's hydrographic collaboration within Indian Ocean Rim Association (IORA) and BIMSTEC. Additionally, regular joint hydrographic missions and training programs will enhance interoperability and trust among regional navies. INS Nirdeshak can also be utilised to train personnel from neighbouring countries in hydrographic surveying, fostering self-reliance and technical expertise.

Additionally, the ship's advanced systems and capability to function as a Hospital Ship, enable it to assist in post-disaster recovery efforts, such as underwater debris removal and the restoration of navigation channels, promoting India's commitment to humanitarian aid. As an indigenous achievement of India's Atmanirbhar Bharat initiative, INS Nirdeshak highlights India's technological prowess and serves as a diplomatic tool to project soft power in the region.

The commissioning of INS Nirdeshak marks a significant milestone in India's maritime journey. By enhancing hydrographic capabilities and facilitating collaborative survey missions, the vessel will promote a rule-based maritime order, economic stability, and sustainable development amongst the regional countries.

In the years ahead, INS Nirdeshak will not only protect India's maritime interests but also strengthen its alliances with regional nations, fostering a legacy of cooperation, trust, and shared prosperity, the release added.

https://www.thehindu.com/news/cities/Visakhapatnam/ins-nirdeshak-to-be-commissioned-at-vizag-naval-dockyard-today/article68996759.ece

INDIA TODAY

Wed, 18 Dec 2024

As China tightens military ties with Pak, Bangladesh, a look at India's airpower

China has strengthened its military ties with both Pakistan and Bangladesh, delivering advanced fighter jets and defence systems to both countries. While these developments raise regional security concerns, India remains well-prepared with superior air defence systems and a robust advantage.

Pakistan's Recent Defence Acquisitions

Pakistan, an old defence partner of China, has recently added more JF-17 Thunder fighter jets to its fleet. These aircrafts, co-produced with China, are a cost-effective option but remain technologically inferior when compared to India's advanced fighter platforms.

Pakistan has also inducted J-10C multirole fighter jets, a fourth-generation Chinese aircraft equipped with modern radar systems and capable of carrying advanced weapons.

Bangladesh's Planned Purchase Of J-10c

Bangladesh is also reportedly negotiating with China to acquire 16 J-10C fighter jets. If finalised, the acquisition would significantly enhance the Bangladesh Air Force's combat capabilities, which currently rely on older platforms like MiG-29 and F-7 jets. The deal marks a growing trend of military cooperation between Bangladesh and China, similar to Pakistan's strategy.

India's Superior Airpower And Defence Systems

While Pakistan and Bangladesh work to modernise their forces with Chinese assistance, India's military preparedness and technological superiority ensure its clear dominance. India's airpower is stronger with a frontline fleet of advanced fighters such as the Rafale, Su-30MKI, Mirage 2000, and indigenous Tejas jets.

These platforms, armed with advanced weaponry and electronic warfare systems, surpass Pakistan's JF-17 and Bangladesh's outdated aircraft.

The Rafale jets, with Meteor missiles and advanced radar capabilities, provide a decisive edge in beyond-visual-range combat.

Air Defence Systems: India has deployed the S-400 Triumf missile system, capable of detecting and neutralising threats over long ranges. This advanced system is complemented by the indigenous Akash missile systems and multiple new inductions, forming a multi-layered defence shield.

India's comprehensive radar and surveillance capabilities ensure constant monitoring along both the western and eastern borders.

Combat Readiness: India's Air Force not only boasts larger numbers but also superior combat experience. With over 500 advanced fighter jets compared to Pakistan's over 400 fighter jets, including JF-17, J-10C, and F-16, and Bangladesh's modest fleet of 50 aircraft, India retains overwhelming air superiority. Pakistan, despite its recent acquisitions, remains reliant on Chinese technology, while Bangladesh's air power is still in a developmental phase.

In addition to air power, India's $75 billion military budget for 2024-25 far surpasses Pakistan's $10 billion and Bangladesh's $5 billion. The combination of cutting-edge technology, larger fleets, and combat readiness gives India an undisputed advantage.

India's continued focus on modernisation—through projects like Tejas Mark-II fighters and advanced drones—further enhances its ability to dominate regional airspace.

China's growing defence exports to Pakistan and Bangladesh reflect its increasing influence in South Asia. However, India's superior air power, advanced defence systems like the S-400, and sustained modernisation efforts ensure that it remains far ahead of both neighbours combined.

https://www.indiatoday.in/india/story/indian-air-force-china-pakistan-fighter-jets-rafale-defence-military-tejas-jf17-2651394-2024-12-18

Science & Technology News

Press Information Bureau
Government of India

Ministry of Science & Technology

Tue, 17 Dec 2024

Advancing STEM: IIT Ropar Inaugurates State-of-the-Art Tinkerers' Lab

The Indian Institute of Technology Ropar is proud to announce the opening of its new Dr Ranbir Singh Tinkerers' Lab (TL), a cutting-edge facility designed to inspire and nurture the next generation of engineers and innovators. This maker space is accessible to all students around the clock and has been made possible by funding from the Maker Bhavan Foundation (MBF) through a donation from philanthropist Dr. Ranbir Singh.

The inauguration ceremony took place on campus and was attended by faculty, students, and guests. This event marks a significant step forward in the field of Science, Technology, Engineering, and Mathematics (STEM) education at IIT Ropar.

Dr Ranbir Singh Tinkerers' Lab is more than just a workspace; it is a creative hub for aspiring engineers, innovators, and makers. The lab encourages students to view technology not just as a subject in school but as a powerful tool for creativity and future focused skilling for young engineers. The environment is designed to empower students to explore and experiment, allowing them to tinker, build, and innovate their ideas into real-world products.

Dr. Ranbir Singh, an honorary Alumnus (La casa) of Indian Institute of Technology, is a key donor for Tinkerers' Lab IIT Ropar. He expressed his excitement, stating, "Investing in the future of our youth is crucial. Tinkerers' Lab will provide students with the resources they need to turn their ideas into reality. I hope this facility ignites a spark of creativity in all who enter."

The lab is equipped with state-of-the-art tools and technology. Students will have the chance to experiment and work on their projects any time of the day. This open access will help them freely explore their ideas beyond standard academic hours, leading to original and innovative projects.

Director of IIT Ropar, Dr. Rajeev Ahuja, emphasized the importance of such initiatives saying, "At IIT Ropar, we believe in the power of hands-on learning. The Dr Ranbir Singh Tinkerers' Lab will serve as a catalyst for innovation and a place where students can gain practical experience that complements their academic pursuits."

With the support of the Maker Bhavan Foundation and the dedication of IIT Ropar, Dr Ranbir Singh Tinkerers' Lab is set to be a transformative space where creativity meets engineering, and where future leaders can develop the skills needed to shape the technology of tomorrow.

About Dr Ranbir Singh

Dr. Ranbir Singh received his PhD and MS Degrees from North Carolina State University; and A B.Tech degree from Indian Institute of Technology, Delhi in 1990. In 2004 he founded GeneSiC Semiconductor Inc., which pioneered the commercialization of many families of Silicon Carbide based power devices. The company was successfully acquired/merged with Navitas Semiconductor (NASDAQ:NVTS) in Aug 2022. During his career, he has developed critical understanding and published on a wide range of SiC power devices and co-authored over 200 publications in various refereed journals and conference proceedings, a book published by Science Direct and is an inventor on 40 issued US and foreign patents. In 2012, EE Times named him among "Forty Innovators building the foundations of the next generation electronics industry."

About Maker Bhavan Foundation

Maker Bhavan Foundation (MBF) was formed in 2019 as a US 501(c) 3 public charity with a vision of modernizing STEM education in Indian science and engineering colleges by promoting a culture of making and active learning and nurturing talented makers – students and faculty. This helps students to learn to build realistic engineering projects that solve real-world problems, develop an inventive mindset, and acquire essential soft skills and habits of lifelong learning. MBF works with various institutes in India, its faculty, and students, to make education more relevant and responsive to the real-life needs of people and society.

https://pib.gov.in/PressReleasePage.aspx?PRID=2085314

Press Information Bureau
Government of India

Ministry of Science & Technology

Tue, 17 Dec 2024

TDB-DST Supports Agnikul Cosmos in Revolutionizing India's Space Ecosystem

Space technologies drive advancements across industries such as telecommunications, navigation, climate monitoring, and defence. Recognizing this immense potential, the Indian government has opened the space sector to private players, introducing reforms to boost innovation, attract investments, and enhance global competitiveness.

In a ground breaking step to further this vision, the Ministry of Science & Technology has announced its support for M/s Agnikul Cosmos Pvt. Ltd., Chennai, to develop and commercialize "Agnibaan," a highly customizable two-stage launch vehicle capable of delivering payloads of upto 300 kg to orbits at 700 km altitude.

This significant initiative is supported by the Technology Development Board (TDB), a statutory body under the Department of Science & Technology (DST). TDB has sanctioned financial assistance for the "Development and Commercialization of Modular Configurable Launch Vehicle for 100 Kg Payload." The project aims to make satellite launches more accessible, efficient, and affordable.

Agnikul Cosmos, headquartered in Chennai and incubated at IIT-Madras, is a pioneering Indian space technology start-up with a vision to democratize access to space. Guided by 45 former ISRO scientists and supported by over 200 engineers, the company has achieved a historic milestone with the maiden launch of Agnibaan SOrTeD, the world's first flight using a single-piece 3D-printed rocket engine.

The centerpiece of Agnikul's innovation, Agnibaan, is poised to revolutionize the satellite launch ecosystem by offering:

- Dedicated, scalable launches for payloads ranging from 30 to 300 kg.
- Reduced lead times for satellite launches to just two weeks.
- Operational flexibility with mobile launch systems deployable globally.
- Customizable space missions for small satellites, eliminating inefficiencies of traditional rideshare models.

The Agnibaan project incorporates several cutting-edge and indigenous technological advancements, including:

- India's first single-piece 3D-printed rocket engine and other critical components.
- Mobile launch platforms capable of enabling launches from any location globally.
- Development of all major subsystems, including engines, mission control systems, and launchpad infrastructure.
- Comprehensive testing facilities for quality assurance, rocket launch assembly, and subsystem evaluations.

Sh. Rajesh Kumar Pathak, Secretary, TDB praised the Prime Minister, Shri Narendra Modi's visionary leadership in opening up the space sector for private players, stating, "These visionary reforms have transformed India into a global hub for space innovation, fostering nearly 200 private space startups. Agnikul Cosmos, supported by TDB, embodies this success, showcasing India's indigenous talent and the spirit of 'Atmanirbhar Bharat' while setting new benchmarks in space technology commercialization."

Mr. Srinath Ravichandran and Mr. Syed Peer Mohamed Shah Khadri, Founders, M/s Agnikul Cosmos said, "We started as a start-up at IIT Madras in a DST supported lab (NCCRD). Now, after having built some new technology, this financial assistance coming in through TDB is a strong sign of encouragement and support for all of us in the team to build world class space technology hardware from India."

https://pib.gov.in/PressReleasePage.aspx?PRID=2085221

Press Information Bureau
Government of India

Ministry of Science & Technology

Tue, 17 Dec 2024

New roadmap for high performance photocatalysts can help sustainable energy production

A new study offers a roadmap for the design of high-performance photocatalysts that can bring benefits ranging from sustainable energy production to environmental remediation.

2D materials have a high absorption coefficient, implying that they can efficiently absorb light and generate electron-hole pairs. This makes them promising candidates for photocatalytic applications. They also have tunable bandgap, reduced path length that charge carriers need to travel, large surface area and can be easily integrated into various device architectures allowing flexibility and scalability.

However, they possess strongly bound excitons (bound state of an electron and an electron hole) and are thus ineffective in driving catalytic reactions that require free charge carriers.

Scientists from Institute of Nano Science and Technology (INST), Mohali, an autonomous institute of Department of Science and Technology, theoretically studying the ground- and excited-state dynamics of bound electrons-hole pairs (excitons) in a heterostructure of a 2D material called metal-telluro-halide demonstrated that engineering of 2D materials that have high electrical resistivity (dielectric materials) is an efficient strategy to regulate their exciton binding energy (EBE) and could make them efficient catalysts.

In a paper published in *Journal of Physical Chemistry C* they elucidated how the application of a magnetic field accelerates charge separation of such materials by exerting opposing forces on photogenerated electrons and holes, while also enhancing EBE through an exciton diamagnetic shift, which could potentially hinder charge separation.

The highly delocalized exciton cloud extending over a few hundred unitcells reduces the EBE to k_BT (25 meV—mili electron volts), promoting spontaneous exciton dissociation into free carriers.

Using PARAM-Smriti supercomputing facility at NABI supported by CDAC, Pune under the National Supercomputing Mission, Government of India, Prof. Abir De Sarkar and his PhD Scholars Mr. Amal Kishore & Ms Harshita Seksaria showed that the GaTeCl/InTeBr vdW heterostructure efficiently splits water into hydrogen, providing a clean energy source. The same method could also be used to produce solar fuels like methanol. Additionally, its photocatalytic properties help degrade pollutants, contributing to cleaner air and water.

https://pib.gov.in/PressReleasePage.aspx?PRID=2085132

THE ECONOMIC TIMES

Tue, 17 Dec 2024

Japan, India startups to study laser-equipped satellite to tackle space debris

Space startups in Japan and India said on Tuesday they had agreed to jointly study using laser-equipped satellites to remove debris from orbit, an experimental approach to the increasingly imminent problem of orbital congestion.

Tokyo-based Orbital Lasers and Indian robotics company InspeCity said they would study business opportunities for in-space services such as de-orbiting a defunct satellite and extending a spacecraft's life.

Carved out from Japanese satellite giant SKY Perfect JSAT this year, Orbital Lasers is building a system that will use laser energy to stop the rotation of space junk by vaporising small parts of its surface, making it easier for a servicing spacecraft to rendezvous.

Orbital Lasers plans to demonstrate the system in space and supply it to operators after 2027, said Aditya Baraskar, the company's global business lead. It can be mounted on InspeCity satellites if the companies clear regulatory requirements in India and Japan, Baraskar added.

The companies said they had signed a preliminary agreement to initiate the collaboration. InspeCity was founded in 2022 and raised $1.5 million last year, while Orbital Lasers has raised 900 million yen ($5.8 million) since it was established in January.

A United Nations panel on space traffic coordination in late October said that urgent action was necessary to track and manage objects in low Earth orbit because of the rapid increase in satellites and space junk.

There are already more than 100 companies in the space servicing market as satellite constellations expand, Nobu Okada, chief executive of Japanese debris mitigation pioneer Astroscale , said earlier this year.The project is the latest example of collaboration between Japan and India, whose governments are working together on the joint Lunar Polar Exploration (LUPEX) mission, which could launch as early as 2026.

Indian rocket maker Skyroot and satellite builder HEX20 are also working with Japanese moon exploration firm ispace on a future lunar orbiter mission.

The two countries' commercial space tie-ups have been driven by Japanese satellite data solutions for India's disaster management and agriculture, and can expand to more fields such as

manufacturing, said Masayasu Ishida, chief executive of Tokyo-based nonprofit SPACETIDE, which has hosted space business conferences since 2015.

"The key is finding where and how to build complementary relationships" that align with national policies such as Make in India, which aims to boost local production, Ishida said.

https://economictimes.indiatimes.com/news/science/japan-india-startups-to-study-laser-equipped-satellite-to-tackle-space-debris/articleshow/116389685.cms