मार्च
March
2025

खंड/Vol. : 50 अंक/Issue : 59

27 /03/2025

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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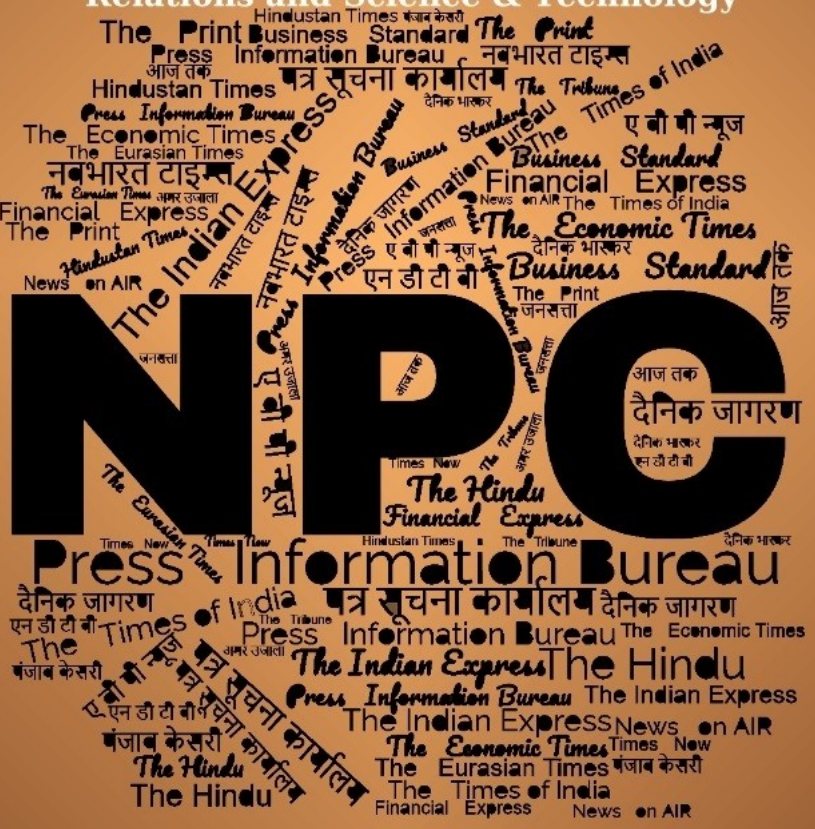

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Source: NavBharat Times, Dt. 26 Mar 2025,
URL: https://navbharattimes.indiatimes.com/state/odisha/bhubaneswar/drdo-and-indian-navy-successfully-flight-test-vertical-launch-short-range-surface-to-air-missile-in-odisha-know-all-video/articleshow/119546257.cms

देश की समुद्री सुरक्षा को और मजबूत बनाने के लिए बुधवार को रक्षा अनुसंधान एवं विकास संगठन (DRDO) और भारतीय नौसेना ने स्वदेशी रूप से विकसित वर्टिकल–लॉन्च्ड शॉर्ट–रेंज सरफेस–टू–एयर मिसाइल (VLSRSAM) का परीक्षण किया।

ओडिशा के चांदीपुर स्थित एकीकृत परीक्षण रेंज (ITR) में दोपहर लगभग 12:00 बजे इसका परीक्षण किया है। रक्षा मंत्रालय ने इस सफल परीक्षण का वीडियो भी साझा किया है। VLSRSAM मिसाइल की खासियत यह होती है कि यह रडार की रेंज से बाहर रहती है।

सफल रहा परीक्षण

रक्षा मंत्रालय ने एक बयान में बताया है कि स्वदेशी रूप से विकसित वर्टिकल–लॉन्च्ड शॉर्ट–रेंज सरफेस–टू–एयर मिसाइल (VLSRSAM) का सफल उड़ान परीक्षण किया गया। यह उड़ान परीक्षण एक भूमि–आधारित वर्टिकल लॉन्चर से बहुत नज़दीकी रेंज और कम ऊंचाई पर एक उच्च गति वाले हवाई लक्ष्य के विरुद्ध किया गया। इसने मिसाइल प्रणाली की निकट–सीमा–कम ऊंचाई क्षमता को स्थापित किया है।

डीआरडीओ और इंडियन नेवी ने पिछले साल सितंबर में भी ऐसा ही एक परीक्षण किया था। VLSRSAM मिसाइल की मारक क्षमता 30 किलोमीटर के आसपास होती है। ये मिसाल धरती से हवा में अटैक करती हैं। लक्ष्य को हवा में ही नष्ट करने की क्षमता रख्ती हैं।

कांप उठेगा दुश्मन

सतह से कम दूरी तक मार करने वाली VLSRSAM पर डीआरडीओ का पूरा फोकस है। छोटी दूरी की ये मिसाइल को लड़ाकू जेट, हेलीकॉप्टर, यूएवी को समुद्र में लक्ष्य सहित नजदीकी दूरी पर बेअसर करने के लिए डिज़ाइन किया गया है। इसे 360 डिग्री में कहीं भी मार करने की क्षमता के साथ नौसेना प्लेटफार्मों पर तैनात किया जा रहा है। रक्षा मंत्रालय ने 2023 में बताया था कि कम दूरी तक मार करने वाली मिसाइल की क्षमता 80 किलोमीटर की होगी।

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DRDO & Indian Navy successfully flight-test indigenously-developed Vertically-Launched Short-Range Surface-to-Air Missile

Source: Press Information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115509

Defence Research & Development Organisation (DRDO) and the Indian Navy conducted the successful flight-test of indigenously-developed Vertically-Launched Short-Range Surface-to-Air Missile (VLSRSAM) from the Integrated Test Range (ITR), Chandipur off the coast of Odisha at about 1200 hrs on March 26, 2025. The flight-test was carried out from a land-based vertical launcher against a high-speed aerial target at very close range and low altitude. It has established the Near-Boundary-Low Altitude capability of the missile system.

During the test, the target was completely destroyed by the missile executing the high turn rate required for engaging targets at very close range, and establishing the missile's agility, reliability & pin-point accuracy. The test was conducted with all weapon system elements deployed in combat configuration. These elements, including missile with indigenous Radio Frequency seeker, Multi-Function Radar and Weapon Control System, have performed as per expectations. The performance of the system was validated by the flight data captured by various Range Instruments developed by ITR Chandipur.

Congratulating DRDO, Indian Navy and the industry, Raksha Mantri Shri Rajnath Singh termed the missile system as proof of India's strong design and development capabilities in defence R&D. It will be an excellent force multiplier for the Indian Navy, he said.

Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat also congratulated DRDO, Indian Navy & associated teams on this successful flight test, and stated that the missile, equipped with modern technologies, will give further technological boost to the Armed Forces.

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Aatmanirbhar Bharat: MoD inks Rs 6,900 crore contracts for 155mm/52 Calibre Advanced Towed Artillery Gun Systems & High Mobility Vehicle 6x6 Gun Towing Vehicles to enhance Indian Army's operational readiness

Source: Press Information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115365

Ministry of Defence (MoD) has signed contracts with Bharat Forge Limited and Tata Advanced System Limited for the procurement of 155mm/52 Calibre Advanced Towed Artillery Gun Systems (ATAGS) and High Mobility Vehicle 6x6 Gun Towing Vehicles respectively at a total cost of about Rs 6,900 crore. The contracts were signed in the presence of Defence Secretary Shri Rajesh Kumar Singh at South Block in New Delhi on March 26, 2025.

With the signing, total contracts worth Rs 1.40 lakh crore have been signed by MoD for capital procurement till date in the current Financial Year 2024-25. During the contract signing, the Project Director of ATAGS from DRDO's Armament Research and Development Establishment, Pune who played a pivotal role in the realisation of the project was felicitated by the Defence Secretary as an honour for his immense contribution.

The 155 mm/52 Calibre ATAGS will replace the vintage and smaller calibre guns and enhance the artillery capabilities of the Indian Army. The procurement of this gun system marks a significant milestone in the modernisation of the Artillery Regiments, enhancing operational readiness. ATAGS, renowned for its exceptional lethality, will play a crucial role in bolstering the Army's firepower by enabling precise and long-range strikes.

Being the first major procurement of towed guns from the private sector by the Indian Army, the project will provide a boost to the Indian gun manufacturing industry in particular and the indigenous defence manufacturing eco-system as a whole. This project is a proud flag-bearers of Aatmnanirbhar Bharat by significantly contributing to employment generation and economic growth in consonance with the Make-in-India initiative.

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Defence News

Defence Strategic: National/International

COAS Gen Upendra Dwivedi underscores need of jointness & integration among Armed Forces amid evolving nature of warfare

Source: Press Information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115429

Chief of Army Staff Gen Upendra Dwivedi has highlighted the evolving nature of warfare, the strategic challenges facing India and the need for jointness and synergy among the armed forces. He was addressing the student officers from the Indian Armed Forces undergoing the 80th Staff Course and the permanent staff at Defence Services Staff College, Wellington.

COAS commended DSSC for its pivotal role in grooming future military leaders and emphasised the importance of professional military education in enhancing operational preparedness and decision making capabilities.

The COAS underscored the significance of leadership, adaptability and technological integration in modern warfare. He urged officers to remain proactive in their approach to emerging security threats and to embrace innovation in military planning and operations.

During his visit, COAS also interacted with faculty members, discussing key aspects of military strategy, operational art and leadership development. He acknowledged the institution's contributions in fostering inter service cooperation and strengthening India's defence preparedness.

Gen Dwivedi was briefed by Commandant DSSC Lt Gen Virendra Vats, on the adaptation of the Staff Course curriculum to align to the challenges of Future Wars, with special reference to the activities of the first Deep Purple Division, wherein 40 tri-services officers have undergone their training. The COAS also interacted with the Veterans of Wellington Military station and recognised their contributions with the 'veteran Achievers Award'.

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Induction Of Fourth 25t Bollard Pull Tug Yuvan (YARD 338)

Source: Press Information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115444

Induction ceremony for fourth 25T Bollard Pull (BP) Tug Yuvan was held on 26 Mar 25 at Naval Dockyard (Visakhapatnam) in presence of Cmde Rajeev John, General Manager (Refit) as the Chief Guest.

These Tugs are a part of the contract for construction of six (06) 25T BP Tugs concluded with M/s Titagarh Rail Systems Limited (TRSL), Kolkata on 12 Nov 21. These Tugs have been indigenously designed and built in accordance with the relevant Naval Rules and Regulation of Indian Register of Shipping (IRS). The Shipyard had successfully delivered three of these Tugs which are being utilised by Indian Navy to provide assistance to Naval ships and submarines during berthing, un-berthing and manoeuvring in confined waters. The Tugs will also provide afloat fire-fighting support to ships alongside or at anchorage and will also have the capability to conduct limited Search and Rescue (SAR) Operations.

These Tugs are proud flag bearers of Make in India and Aatmanirbhar Bharat initiatives of Government of India.

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MoD brainstorms with 50 MSMEs & start-ups to accelerate defence innovation

Source: Press Information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115210

Senior officials of Department of Defence Production, under the chairmanship of Secretary (DP) Shri Sanjeev Kumar, have held deliberations with bigwigs from over 50 start-ups and MSMEs on understanding the key challenges affecting these ventures, identifying opportunities and supporting them in accelerating innovation. The brainstorming sessions were held at South Block in New Delhi on March 24 & 25, 2025.

Most of the start-ups and MSMEs, which attended the sessions, are engaged with Innovations for Defence Excellence (iDEX). Insightful deliberations across critical & emerging technology

domains such as Space Technologies, Quantum Technologies, Electronic Warfare, Drones, Artificial Intelligence & Machine Learning, Radar Technologies, Cyber Security, and Advanced Materials helped in understanding their potential applications in both civil and defence sectors.

Thanking the participants for their valuable insights, Secretary (Defence Production) stated that sessions would help the Ministry in understanding the perspective of the industry, particularly new technology start-ups. It would help in fine-tuning the policies & procedures, leading to wider participation of start-ups working in deep tech, he added.

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Strengthening ties, expanding defence exports, and countering China: Why AIKEYME 2025 is more than just a naval drill

Source: The Economic Times, Dt. 26 Mar 2025,
URL: https://economictimes.indiatimes.com/news/defence/strengthening-ties-expanding-defence-exports-and-countering-china-why-aikeyme-2025-is-more-than-just-a-naval-drill/articleshow/119536988.cms

India is set to make history next month with the launch of AIKEYME (Africa-India Key Maritime Engagement), its first major naval exercise with African nations. The move is part of a broader effort to solidify India's position as a 'preferred security partner' in the Indian Ocean Region (IOR), an area where China has been expanding its strategic influence.

Scheduled to take place off the coast of Dar es Salaam, Tanzania, from 13-18 April 2025, AIKEYME will be co-hosted by the Indian Navy and the Tanzania People's Defence Force (TPDF). Defence Minister Rajnath Singh is set to inaugurate the event.

The exercise will include 10 African nations: Tanzania, Comoros, Djibouti, Eritrea, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, and South Africa. India aims to establish AIKEYME as a biennial event, expanding its scope in future editions to include West African nations.

What's on the Agenda?

According to the Ministry of Defence, AIKEYME will be conducted in two phases—harbour and sea.

The harbour phase will involve command post exercises, discussions on anti-piracy operations, and training sessions on seamanship and Visit, Board, Search, and Seizure (VBSS) operations. The sea phase will focus on practical drills, including search and rescue missions, small arms training, and helicopter operations.

Vice Admiral Tarun Sobti, Deputy Chief of the Naval Staff, emphasised the strategic importance of the initiative: "With the announcement of 'Mahasagar' (Mutual and Holistic Advancement for Security Across the Regions) by the Prime Minister during his visit to Mauritius in March,

AIKEYME and IOS Sagar—both first-of-their-kind initiatives—are aimed at consolidating India's stature as the 'preferred security partner' and 'first responder' in the IOR."

Indian Ocean Ship (IOS) Sagar: Strengthening Regional Surveillance

Alongside AIKEYME, India will launch another pioneering initiative: Indian Ocean Ship (IOS) Sagar. As part of this mission, the offshore patrol vessel INS Sunayna will be deployed to the southwestern IOR from 15 April to 8 May 2025.

Aboard the ship will be a combined crew of Indian sailors and 44 personnel from nine friendly nations, including Sri Lanka, the Maldives, Mauritius, Comoros, Kenya, Madagascar, Mozambique, Seychelles, and South Africa. The ship will undertake joint surveillance of the Exclusive Economic Zones (EEZs) of multiple participating nations while making port calls in Dar es Salaam, Nacala, Port Louis, Port Victoria, and Malé.

Why It Matters: Addressing Security Challenges in the Indian Ocean

The IOR is a strategically vital region, crucial for global trade and regional stability. However, it faces persistent security threats, including piracy, human trafficking, drug smuggling, and illegal fishing.

India has long positioned itself as a security provider in the region. The AIKEYME exercise and IOS Sagar initiative align with India's broader maritime strategy under SAGAR (Security and Growth for All in the Region). This framework focuses on regional cooperation to tackle shared threats.

"Over the past 10 years, the Indian Navy has deepened its partnerships with navies and agencies of IOR countries to enhance maritime security in consonance with the government's vision of SAGAR," Vice Admiral Sobti said.

Balancing China's Expanding Footprint

China has significantly expanded its presence in Africa through military and economic investments, including the establishment of a military base in Djibouti. India's increasing maritime engagements with African nations signal its intent to offer an alternative security partnership.

India's outreach is not new. Over the past decade, it has conducted multiple joint operations with African navies, particularly in anti-piracy missions. In 2019, India hosted the Africa-India Field Training Exercise (AFINDEX) in Pune with participation from 17 African nations. The country has also formalised defence ties with Kenya and assisted in establishing military training academies in Zimbabwe and Ethiopia.

Additionally, the Indian Navy has been setting up coastal surveillance stations in key African locations—including Seychelles, Mauritius, and the Maldives—underscoring its long-term commitment to regional security.

A Win-Win for Security and Economic Growth

Beyond maritime security, India's engagement with Africa aligns with its broader economic ambitions. India is positioning itself as a defence exporter, with Africa emerging as a key market.

India has already become the world's 23rd largest arms supplier, exporting military systems such as surface-to-air missiles and light weapons. Strengthening security ties with African nations could open new opportunities for India's growing defence industry, benefiting both regions through industrial growth and job creation.

To institutionalise defence dialogue, India launched the India-Africa Defence Dialogue (IADD) in 2020. The second edition, held in 2022, saw participation from 50 African countries, with discussions centred on maritime security, counter-terrorism, and technology-sharing.

The Indian Navy remains vigilant about security threats in the region. While attacks by Somali pirates and Houthi rebels have declined, an Indian warship is permanently stationed in the Gulf of Aden, ready to respond if piracy resurges.

As India strengthens its naval collaborations with African nations, AIKEYME and IOS Sagar could mark the beginning of a deeper, long-term security partnership. The initiatives not only reinforce India's defence diplomacy but also establish it as a credible, proactive security partner in the IOR.

With future editions of AIKEYME expected to include more African nations, India's defence footprint in the region is set to grow—one naval drill at a time

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After delays, GE Aerospace announces delivery of jet engines for Tejas LCA-Mk1A

Source: The Hindu, Dt. 26 Mar 2025,
URL: https://www.thehindu.com/news/national/after-delays-ge-aerospace-announces-delivery-of-jet-engines-for-tejas-lca-mk1a/article69376400.ece

Engine manufacturer General Electric (GE) Aerospace on Wednesday (March 26, 2025) announced the delivery of the first of 99 F404-IN20 engines to Hindustan Aeronautics Limited (HAL) for the Tejas Light Combat Aircraft Mk 1A fighter jet, marking the commencement of deliveries for the delayed programme. Defence sources said that 12 engines are expected to be delivered this year.

The first engine to power the LCA-Mk1A moved out of GE facility on Tuesday and is expected to arrive in India in April, official sources in the know said. At Aero India in February, HAL Chairman and Managing Director D.K. Sunil said that 12 jets would be ready this year.

Once the engine arrives more tests will be done at HAL facility, sources said adding that a firm date of delivery to IAF can't be given yet.We are on track to deliver to the latest schedule we have agreed with HAL, GE Aerospace said in response to a query from The Hindu.

Speaking at an event in February, IAF Chief Air Chief Marshal A. P. Singh said that IAF needs to add 35-40 fighter jets every year to fill the shortages in numbers and that HAL has promised to produce 24 Tejas Mark-1A jets next year.

Shawn Warren, General Manager, combat & trainer engines, GE Aerospace, in a statement, attributed the delays to restarting the production line that was dormant for five years.

Recalling the earlier collaboration for the LCA-MK1 jets he said that after collaborating with the Aeronautical Development Agency in the 1980s, F404-IN20 engine was selected in 2004, The F404-IN20is a tailored design, of the F404 family, for India's single-engine fighter with the highest thrust within F404 family and a higher-flow fan, unique single-crystal turbine blades, and numerous special components having customized it for the needs of Indian Air Force (IAF).

"The F404 demonstrated it was an excellent fit for the Tejas LCA. On its first test flight in 2008, the aircraft climbed to numerous mission altitudes and achieved Mach 1.1 speed," Mr. Warren said.

By 2016, GE Aerospace delivered 65 F404-IN20 engines for the 40 Tejas jets ordered earlier and with no additional engine orders on the horizon, the production line for F404-IN20 was shut down, the statement said. However, when HAL ordered an additional 99 engines in 2021 for the Tejas Mk1A LCA, our team began the complex task of restarting the F404-IN20 production line, which had been dormant for five years, and re-engaging the engine's global supply chain, Mr. Warren said.

"Restarting a jet engine production line is a challenging process. Restarting the F404-IN20 engine line during the COVID pandemic was even more challenging," he said adding that they are working closely with their suppliers to ramp up production on parts and materials for the F404-IN20.

At Aero India, Mr. Sunil had asserted that GE's supply chain issues have been resolved and the would receive 12 F-404 engines for the LCA-Mk1A this year. "The GE has stabilised its manufacturing process for the F404 engines. We have already made three aircraft, and by the end of this year, 11 will be manufactured. As the engines start coming in, our delivery to the IAF will start," he had stated.

He also said that three Tejas Mk1A are flying and by the end of this year, one jet from Nasik and 11 from Bengaluru will be ready while stressing that the existing order for 87 LCA-Mk1A would be completed in three and a half years and the additional order for 97 jets by FY31-32 with production rate going to 24 jets per year.

Early this month, a high level empowered committee headed by Defence Secretary Rajesh Kumar Singh constituted to recommend ways for Capability Enhancement of the IAF identified key thrust areas and made recommendations for implementation in the short, medium and long-term in the report presented to Defence Minister Rajnath Singh.

The IAF is currently at 31 fighter squadrons as against the sanctioned strength of 42.5 squadrons. While deliveries of the Light Combat Aircraft (LCA)-Mk1A are delayed, several of the existing fighter jets – jaguars, MIG-29UPG and Mirage-2000 – will also start phasing out by end of this decade. The bigger and more capable LCA-Mk2 is under development while the Advanced Medium Combat Aircraft (AMCA), the country's fifth generation jet, is atleast a decade away.

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LAC पर भारत ने बढ़ाई अपनी ताकत, लद्दाख में होगा नई डिवीजन का गठन

Source: TV9 Bharatvarsh, Dt. 27 Mar 2025,
URL: https://www.tv9hindi.com/india/indian-army-created-division-level-deployed-in-eastern-ladakh-region-lac-3197844.html

भारतीय सेना ने अपने ऑर्डर ऑफ बैटल (ORBAT) में एक बड़ा बदलाव करते हुए पूर्वी लद्दाख क्षेत्र में स्थायी रूप से तैनात होने के लिए एक डिवीजन का गठन किया जाएगा. यह कदम वास्तविक नियंत्रण रेखा (LAC) के दोनों ओर भारी संख्या में सैनिकों की तैनाती को देखते हुए उठाया गया है. यह नई डिवीजन, 3 डिवीजन के अतिरिक्त होगी, जो अब तक पूरे लद्दाख क्षेत्र में LAC की जिम्मेदारी संभाल रही थी. सूत्रों के अनुसार, इस नई डिवीजन का नाम "72 डिवीजन" होगा और इसका गठन जारी है. इसका मुख्यालय तैयार किया जा रहा है और इसकी एक ब्रिगेड पहले से ही पूर्वी लद्दाख में तैनात हो चुकी है और काम करना शुरू कर चुकी है. इस डिवीजन के बड़े हिस्से को देश के पश्चिमी भागों में प्रशिक्षण दिया जा रहा है, ताकि सैनिकों, उपकरणों और संगठन को विशेष कार्यों के अनुसार तैयार किया जा सके.

72 डिवीजन का गठन

यह 72 डिवीजन लेह स्थित "फायर एंड फ्यूरी" कोर के अधीन रहेगी. इससे पहले, लद्दाख के 832 किमी लंबे LAC की सुरक्षा की जिम्मेदारी पूरी तरह से 3 डिवीजन के पास थी. आमतौर पर एक ब्रिगेड में 3,500 से 4,000 सैनिक होते हैं और इसका नेतृत्व एक ब्रिगेडियर करता है, जबकि एक डिवीजन का नेतृत्व एक मेजर जनरल करता है.

"यूनिफॉर्म फोर्स" की वापसी

इस समय, जिस क्षेत्र की सुरक्षा अब 72 डिवीजन को सौंपी जा रही है, उसे "यूनिफॉर्म फोर्स" अस्थायी रूप से संभाल रही थी. इसे अस्थायी रूप से तैनात किया गया था, ताकि सुरक्षा में कोई कमी न रहे. अब, "यूनिफॉर्म फोर्स" को वापस जम्मू के रियासी क्षेत्र में भेजा जाएगा, जहां यह पहले अपने आतंकवाद विरोधी अभियान (CICT) की भूमिका निभा रही थी.

भारतीय सेना का पुनर्गठन और LAC की सुरक्षा

भारतीय सेना में कुल 1.2 मिलियन (12 लाख) सैनिक हैं और यह 6 ऑपरेशनल कमांड में संगठित है, जिसमें 14 कोर और 49 डिवीजन शामिल हैं. लद्दाख में चीनी सेना की गतिविधियों को देखते हुए भारत ने 2020 में 68,000 सैनिक, 90 टैंक, 330 इन्फैंट्री कॉम्बैट वाहन और अन्य हथियारों को अग्रिम मोर्चों पर तैनात किया था. "फायर एंड फ्यूरी" कोर की स्थापना 1999 के कारगिल युद्ध के बाद हुई थी. इसमें अब तक 3 डिवीजन और 8 डिवीजन शामिल थीं, जो लद्दाख के पूर्वी और पश्चिमी हिस्सों की सुरक्षा संभालती थीं.

1. पश्चिमी लद्दाख में कारगिल का क्षेत्र आता है, जो 8 डिवीजन के अधीन है और नियंत्रण रेखा (LoC) के साथ पाकिस्तान से लगते क्षेत्र की निगरानी करता है.
2. इसके अलावा, दुनिया के सबसे ऊंचे युद्धक्षेत्र सियाचिन ग्लेशियर की सुरक्षा भी इसी कोर के अंदर आती है.

2021 में, सेना का पुनर्गठन किया गया, जिसमें मथुरा स्थित 1 (स्ट्राइक) कोर को चीन सीमा की सुरक्षा में लगाने का निर्णय लिया गया था. साथ ही, हिमाचल प्रदेश और उत्तराखंड के LAC क्षेत्र की सुरक्षा के लिए एक नई कोर बनाने की प्रक्रिया भी चल रही है.

भारत–चीन विवाद और वार्ता प्रक्रिया

पूर्वी लद्दाख में 832 किमी लंबे LAC को 65 "पेट्रोलिंग पॉइंट्स" (PPs) में बांटा गया है, जहां सैनिक नियमित रूप से गश्त करते हैं, लेकिन 2020 के बाद LAC पर स्थिति तनाव पूर्ण बनी हुई है और चीन के साथ कई स्तरों पर बातचीत जारी है.

तीन स्तरों की वार्ता प्रक्रिया:

1. कोर कमांडर स्तर की वार्ता इसमें दोनों देशों की सेना के वरिष्ठ अधिकारी शामिल होते हैं और यह रणनीतिक स्तर की बातचीत होती है.
2. डिवीजन कमांडर स्तर की वार्ता इससे पहले, डिवीजन कमांडर सबसे उच्च स्तर के अधिकारी होते थे, जो जमीनी हालात को सुलझाने में शामिल होते थे.
3. ब्रिगेड और सेक्टर कमांडर स्तर की वार्ता इस स्तर पर नियमित रूप से बातचीत होती है, ताकि स्थानीय स्तर पर तनाव को कम किया जा सके.

LAC पर विवादित क्षेत्र और नए टकराव बिंदु

भारत और चीन की LAC को लेकर अलग–अलग धारणाएं हैं, जिसकी वजह से टकराव की स्थिति बनती रहती है. 2020 के बाद से, पांच नए विवादित क्षेत्र उभरे: #गलवान घाटी में किलोमीटर 120 क्षेत्र #शोक्शा ला में PP15 और PP17A #पैंगोंग झील के उत्तर में रीचिन ला और रेजांग ला. इसके अलावा, 2020 से पहले भी कुछ अलग–अलग स्थानों पर भारत और चीन के बीच LAC की स्थिति को लेकर मतभेद थे, जिनमें शामिल हैं:

1. त्रिग हाइट्स
2. डेमचोक
3. डेपसांग बुल्ज
4. कोंगका ला
5. स्पांग्गुर गैप
6. माउंट सज़ुम
7. समर लुंगपा
8. पॉइंट 6556 के पूर्वी क्षेत्र
9. चारडिंग नाले का क्रॉसिंग पॉइंट
10. पैंगोंग त्सो
11. डुमचेले

12. चुमार

भारत और चीन की सेनाओं के बीच पूर्वी लद्दाख में तनाव अभी भी बना हुआ है। भारत ने अपनी स्थिति को मजबूत करने के लिए 72 डिवीजन की स्थापना की है, जो स्थायी रूप से इस क्षेत्र की सुरक्षा संभालेगी. हालांकि, दोनों देशों के बीच विवादों को हल करने के लिए सैन्य स्तर पर वार्ता जारी है, लेकिन जमीनी स्तर पर सतर्कता बनाए रखना जरूरी है.

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Odisha startup’s tracking tool to enhance safety at IAF airbases

Source: The Times of India, Dt. 27 Mar 2025,
URL: https://timesofindia.indiatimes.com/city/bhubaneswar/odisha-startups-tracking-tool-to-enhance-safety-at-iaf-airbases/articleshow/119542681.cms

An Odisha-based startup, IG Defence and Aerospace, has developed an advanced tracking tool that will be used by Indian Air Force (IAF) to enhance security and efficiency at airbases. IAF has signed a contract with the company to deploy its bluetooth low energy (BLE) tool tracking system. Officials sources said the indigenous technology streamlines maintenance operations and strengthens inventory management across IAF's 60 airbases. Founder of IG Aerospace and Defence, Bodhisattwa Sanghapriya, said their tracking system integrates hardware and software, with each tool and equipment embedded with a microchip. "Each tool, equipment and critical part of the aircraft in the airbase will have a microchip connected with BLE tool tracking system. If a material is stolen by somebody or taken by mistake in an aircraft, the system will red flag it with an alarm in real-time and send the location to the security officer concerned," he added.

He said keeping track of all tools and equipment manually is not easy. "But our system will make it easy. Without permission, nobody can take a tool or bring a tool to the airbase. An aircraft has thousands of tools, and the system will keep track of everything. We have not used internet connectivity in the system to keep an airbase safe from any cyberattack," he added. The tracking system will be piloted at Gwalior airbase before its planned expansion to other IAF and Army airbases. A key benefit of the technology is its role in preventing damage by foreign object debris (FOD), which is a major safety concern. "Undetected tools or bolts on runways can cause tyre bursts and structural damage during take-off or landing. With automated alerts, the system improves runway safety. It also features an extended charging cycle of six-eight months, reducing maintenance efforts," said Sanghapriya.

The start-up developed the system after winning the ‘iDEX Challenge', part of the defence ministry's initiative to support indigenous defence startups. The iDEX programme provides ‘Support for Prototype and Research Kickstart' (SPARK) grants to startups and MSMEs through Defence India Startup Challenges (DISC), providing funding up to Rs 1.5 crore for innovative projects.

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Science & Technology News

Private Sector to Play a Major Role in National Research Foundation: Dr. Jitendra Singh

Source: Press information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115247

Union Minister Dr. Jitendra Singh, while addressing the Lok Sabha today, highlighted the critical role of private sector involvement in the newly established National Research Foundation (NRF). The foundation, conceptualized to boost India's innovation ecosystem, is set to receive a substantial share of its funding from non-government sources.

Dr. Jitendra Singh underscored that the NRF, named ‘Anusandhan’, has been designed after extensive study of global models, including those in the United States. "We are among the few nations with such a structured research foundation, and I am confident that our model is a refined version of existing frameworks," he stated.

Responding to a query on fund distribution and regional research growth, particularly for Rajasthan, Dr. Jitendra Singh clarified that funding allocation would be based on merit and resource availability. "Rajasthan will have a larger pool, and private participation will determine investments. The distribution will be need-based and equitable," he assured.

Dr. Jitendra Singh further detailed the four heads of funding within the NRF framework. "The funding structure consists of the ANRF Fund, the Innovation Fund, the Society for Engineering and Research Board—now integrated into the NRF—and a special purpose fund of Rs 20,000 crore dedicated to research, development, and innovation (RDI). This multi-faceted approach ensures that research initiatives are well-supported, fostering both innovation and long-term growth in India's scientific ecosystem."

The Minister elaborated on the funding structure, explaining that out of the Rs 50,000 crore corpus, Rs 14,000 crore will come from the government, while Rs 36,000 crore will be sourced from private partners and philanthropic contributions. "The emphasis is on equity-based research that not only facilitates start-ups but also ensures their sustainability," he remarked.

Dr. Jitendra Singh cited India’s space and vaccine development success stories as examples of how public-private collaboration has yielded significant results. "Our space achievements and vaccine breakthroughs have positioned India as a global leader. We were once part of the 'Fragile Five'; today, we aim to be in the 'First Five'," he declared.

Highlighting India’s rising stature in global innovation, Dr. Jitendra Singh pointed out that the country has moved from 350 start-ups in 2014 to 1.75 lakh today, making India the third-largest innovation ecosystem in the world. He also noted the improvement in patent filings, with India now ranking sixth globally. "More importantly, 56% of patents are filed by resident Indians, proving that our talent is thriving within the country," he added.

With India ranking fourth in global research publications and aiming to move up further by 2029, the Minister reiterated the government's commitment to fostering a strong research and development ecosystem. "The age of working in silos is over. We are integrating efforts, building synergies, and ensuring that India's research prowess is recognized globally," he concluded.

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Parliament Question: Research And Professional Programmes

Source: Press information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115323

Ministry of Science and Technology, through Department of Science and Technology (DST), Department of Biotechnology (DBT) andDepartment of Scientific & Industrial Research (DSIR)/Council of Scientific & Industrial Research (CSIR), has undertaken several initiatives to develop an inclusive society and empower various sections of society through Science and Technology (S&T) interventions. The initiatives promote inclusivity and equity by encouraging access to appropriate S&T solutions, emphasizing skill development, capacity building, community engagement, and collaboration with various stakeholders to improve the socio-economic empowerment of marginalized/ weaker sections, women, disadvantaged and various other sections of the society.

Department of Science and Technology (DST) has implemented various schemes & programmes to constantly endeavour societal development and empowerment by infusing S&T based interventions. These initiatives focus on delivering location specific, science-led solutions, emerging and appropriate technologies for sustainable livelihoods, establishing research & development (R&D) facilities with sophisticated instruments, skill development, training and capacity building to enable an inclusive society, primarily Youth, Women, Scheduled Caste (SC) and Scheduled Tribe (ST), Economically Weaker Section (EWS), Divyangjan, elderly, and other marginalized and backward communities.

Department of Biotechnology (DBT), through its Fellowship, Teaching and Societal Development programmes, emphasizes creating income & employment generation avenues, dissemination of field-tested and proven biotechnological innovation and technologies developed by government autonomous institutions, national laboratories, universities, scientific research institutes etc. for immediate benefit of the community such as women, SC, ST population, rural population and marginalized sections of the society, especially farmers and unemployed youth in aspirational districts and rural areas.

Department of Scientific and Industrial Research (DSIR), through Council of Scientific and Industrial Research (CSIR), is utilizing the knowledgebase and technologies available across CSIR institutes to empower different strata of society,particularly addressing rural challenges through various projects with deployment of relevant CSIR technologies/innovations/interventions for augmenting the income and improving the quality of lives in villages. This contributes to

developing an inclusive society and empowering various societal groups through Science and Technology (S&T) interventions.

In addition, several other ministries, including the Ministry of Micro, Small and Medium Enterprises; Ministry of Social Justice and Empowerment; Ministry of Education; Ministry of Housing and Urban Affairs; Ministry of Labour & Employment; Ministry of Culture; Ministry of Food Processing Industries; and the Ministry of Agriculture & Farmers' Welfare, have also implemented programs to empower various sections of society.

The Government has implemented various steps to develop research and professional programs aimed at supporting marginalized and backward classes.These programs and training initiatives have empowered participants from diverse backgrounds by equipping them with the essential skills in their respective fields. As a result, they have contributed to building a skilled workforce and promoting inclusive development across the country. Details of the major research and professional programs being implemented under DST, DBT and DSIR/CSIR, and various other Ministries and Departments are as follows-

Department of Science and Technology (DST)

1. Scheduled Castes Sub Plan (SCSP) and Tribal Sub Plan (TSP) supported around 500 S&T projects during the last two decades in different states in diverse areas of agriculture, resource management, microenterprise development, art & craft, post-harvest technologies, health and nutrition, engineering and allied aspects, training and skill development, drinking water and sanitation, and energy to improve the quality of life of SC/ST communities. In addition, following activities are being performed to achieve the desired objectives:

- Around 52 Science Technology and Innovation (STI) Hubs have been established for SC & ST Communities to nurture and ensure the development, improvement and delivery of appropriate and relevant STI approaches for their equitable inclusive growth through creation of sustainable livelihoods and improving the quality of life in tune to their growing aspirations;
- The programme on “Accelerated Development of Particularly Vulnerable Tribal Groups (PVTGs)” complements the National PVTG Mission announced by Union Government in March 2023 by developing sustainable STI solutions to addresses the vulnerabilities faced by the 75 PVT Groups;
- Around 11 SC/ST Cells are being supported in different States for mapping (gathering) information on livelihood system (weakest linkages and strengths), local & indigenous knowledge and ingesting it with technological information to help in development of specific strategies, technology dissemination and last mile delivery of interventions to target beneficiaries for defining implementation policies;

2. Science & Technology for Women (STW) programme through its Women Technology Parks (WTP) aim to improve the weakest link of the predominant livelihood system of women in an area and promote social entrepreneurship and women employment based on the strongest link of the livelihood system through interventions of Science, Technology

and Innovations. Around 40 WTPs have been established and 150 projects have been supported to develop technologies for the addressing the issues related to women.

3. Strengthening, Upscaling & Nurturing Innovations for Livelihood (SUNIL) programme supports collaborative projects from NGOs and Knowledge Institutions (KIs) for improving the S&T knowledge, skill enhancement, capacity building and socio-economic conditions of the community through network programmes. Around 8 projects have been supported for S&T based solutions through applied research for socio-economic development of Economically Weaker Section (EWS) and capacity building of Community based Organizations (CBOs) & NGOs. Around 8 such projects have been supported during the year 2024.

4. Inspire Awards-MANAK(Million Minds Augmenting National Aspiration and Knowledge) has awarded around 21,087 ST students during last 5 years for promoting 'Original ideas' having potential to address societal needs through Science & Technology especially in context of National flagship Programs such as Swachh Bharat, Digital India, Swasth Bharat, Make in India, Energy, Environment, Sanitation etc. An award of Rs. 10,000/- is being provided to each beneficiary.

5. R&D Infrastructure hands-on training programmes cum sensitization on the state-of-the-art equipment, use and application of various instruments and analytical techniques and benefitted around 10000 tribal researchers & students through Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI) programme, Fund for Improvement of S&T Infrastructure (FIST) and Sophisticated Analytical & Technical Help Institutes (SATHI) centres. To date, nearly 8573 researchers from various educational background and subject areas have been trained and in addition 11,441 school students attended the 132 awareness programs related to many state- of- the- art instruments and technologies and established 15 Sophisticated Analytical Instrument Facilities (SAIF) in different parts of the country.

6. National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) established about 30 labs/experience centres to provide students with opportunities for continuous learning and hands-on practice. Divyasampark IHUB Roorkee trained 17,409 students under the TSP Program for Devices Materials and Technology Foundation. Approx. 46,974 number of beneficiaries trained under skill development programme of Inter Cyber Physical Systems. The Drone Didi Workshop, organized under the "Digital Agri Village" project at IIT Bhilai, showcased the innovative use of drones in precision agriculture.

7. Anusandhan National Research Foundation (ANRF) through Inclusivity Research Grant (IRG), erstwhile EMEQ Scheme provided funding support to around 125 researchers every year belonging to the Scheduled Caste/Scheduled Tribe to undertake research in frontier areas of science and engineering.

8. National Quantum Mission (NQM) encourages SC, ST, marginalized and backward classes from all states and districts, to participate and benefit from the Mission's programs through established four Thematic Hubs (T-Hubs) (Quantum Computing at IISc. Bengaluru; Quantum Communication at IIT Madras in association with C-DOT, New

Delhi; Quantum Sensing & Metrology at IIT Bombay; and Quantum Materials & Devices at IIT Delhi).

9. National Innovation Foundation (NIF) under its dissemination and social diffusion efforts, introduced livelihood generating innovations to remotest locations in the country like Jammu and Kashmir, North Eastern States, Andaman and Nicobar Islands amongst others. NIF has till date recognised 1145 Grassroots innovators; implemented its technologies in few Correctional Homes and provided risk capital to 238 innovation-based enterprise projects between 2003-18 with support from Small Industries Development Bank of India (SIDBI) under Micro Venture Innovation Fund (MVIF). Around 71 community workshops have been established in 24 states of the country to provide access of scientific/ technological tools to the people in rural areas.

10. National Initiative for Developing and Harnessing Innovations (NIDHI) - Inclusive Technology Business Incubators (iTBIs) centers provide financial support, mentorship, and access to resources that empowers startups, entrepreneurs and individuals from marginalized backgrounds especially SC/ST to transform their innovative ideas into viable businesses and established 48 NIDHI iTBI centers and startups in Tier 2 & Tier 3 cities to provide innovative solutions addressing local problems having significant societal impact on the nearby regions, including marginalized communities. Additionally, under Innovation and Entrepreneurship (I&E) based training programmes, around 23498 beneficiaries have been trained through 317 organizations in different parts of the country during last 5 years.

11. North East Centre for Technology Application and Reach (NECTAR) provides special outreach programs to ensure that students from rural and tribal communities have access to quality STEM education and facilitated the establishment of a Music School for Persons with Disabilities (PwDs) in Shillong and trained individuals to seek employment as music teachers, performers, or studio artists, fostering financial self-reliance. A foundation course of 6 months in Computers and Employability for Persons with Visual Impairment. In addition, establishment of STEM Education Hub at NECTAR, Meghalaya serves as a resource centre, offering training and workshops on interactive experiments, coding workshops, robotics training, and AI applications for students and teachers from various schools and colleges in Meghalaya.

12. Science and Heritage Research Initiative (SHRI) Cell initiated Millet program to promote traditional food, preservation of recipes, scientific intervention for increased productivity, storage life, and post-processing of millets, generally grown and consumed in tribal, marginalized, and backward areas. The Millet Program supports these communities through scientific interventions such as preserving their traditional knowledge, clinically validating the health benefits, providing better cost-effective methods and technologies for production and storage of millets.

Department of Biotechnology (DBT)

- DBT supports National level programs like DBT-Junior Research Fellowship program and the PG Teaching program to promote higher education in the country in order to facilitate students from various backgrounds, including SC and other weaker sections.

- Under BIRAC, the Social Innovation Programme for Products Affordable & Relevant to Societal Health (SPARSH) supports biotechnological interventions to address critical societal need of marginalized communities through SPARSH centers.
- Through STAR College Programme, the support was extended to colleges in remote and underprivileged areas under Urban and Rural categories since 2018-19. During this period, 75 colleges from rural areas, 13 colleges from Aspirational Districts and 58 girl's colleges in rural and marginalized areas benefitted from this initiative.
- Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)is aimed at enhancing coordination between farmers and research laboratories for exploring solutions to limitations in agricultural practices through deployment of advanced technologies. The programme also emphasizes on development of bio-based agri-enterprises in rural areas based on affordable technologies.

Department of Scientific and Industrial Research/Council of Scientific and Industrial Research (CSIR)

1. CSIR Aroma Mission is catalysing Rural Empowerment through Cultivation, Processing, Value Addition and Marketing of Aromatic Plants and initiated "CSIR-Aroma Mission" in 2017. Since then, more than 43,600-hectare land has been brought under cultivation of aromatic crops generating employment of about 80 lakhs rural man-days,115startups supporting new entrepreneurships.

- CSIR enabled the famed Purple Revolution by introducing Lavender cultivation in 10 districts of J&K benefitting more than 1000 farming families through increasing their income from Rs. 20,000/- to Rs. 200,000/- per acre per year.
- Atmanirbharata in Lemongrass essential oil with the implementation of CSIR Aroma Mission, India has become one of the largest exporters of lemongrass essential oil in the world with about 600 tonnes worth Rs.60 crores of lemongrass essential oil exported during 2021-22.
- Golden revolution in Himachal Pradesh has become the highest producer of aromatic marigold essential oil in the country leading to the production of 8 tonnes of marigold oil (worth Rs. 11.2 crore), which has enhanced the farmers' income 2.5 times over traditional crops (Rs. 50,000-60,000/ha/year).

2. CSIR-Floriculture Mission initiated in 2020-21 utilizes the knowledgebase available in CSIR institutes to help Indian Floriculture farmers in income enhancement and entrepreneurship development. Its implementation has helped to bring about 6603 acres of land under cultivation in 244 districts covering 29 States and UTs benefiting about 18,692 floriculture farmers.

- A significant achievement is the indigenous development of Tulip bulb production in Lahaul & Spiti that helped in reducing the import of planting materials.
- For the domestication of indigenous wild ornamental plants, propagation techniques including Tissue Culture have been developed for 20 species that are collected from

Western Himalaya, Eastern Himalaya, Western Ghats, Eastern Ghats and Indo-Gangetic plains.

- In collaboration with the Khadi and Village Industries Commission (KVIC), Apiculture has been integrated with CSIR Floriculture Mission for high quality Honey production. So far total 8,277 Bee Boxes provided to the clusters developed by CSIR Labs benefiting around 8000 farmers.

3. CSIR Seaweed Mission aimed to "Generate the knowledge and innovations that would help make seaweed cultivation a new form of agriculture which is remunerative, eco-friendly, sustainable and expansive in scope".

- CSIR takes pride for being the first in the country to pioneer the Kappaphycusalvarezii cultivation technology leading to commercial farming of the seaweeds in India.
- More than 800 self-help groups (SHGs) in Tamil Nadu have adopted Kappaphycus cultivation as means of their livelihood.
- The Seaweed research has resulted in the development of a new seaweed industry generating additional employment opportunities and revenue. Seaweed technologies have been developed and transferred to 12 companies for commercialization.
- About 5000 fishermen were trained so-far under various schemes, especially in Tamil Nadu, Gujarat, Andhra Pradesh.

4. CSIR Integrated Skill Initiative (Bridging the skill gaps in Scientific Disciplines) is providing skilling, reskilling, and upskilling training covering a wide spectrum of science and technology for undergraduates, postgraduates, and research students, including participants from marginalized and backward classes - SC/ST, differently-abled, minorities, and other vulnerable communities who seek employment opportunities. From June-2019, CSIR-UGC NET, the provision of reservation for appearing in CSIR-UGC National Eligibility Test (NET) to the candidates belonging to Economically Weaker Sections (EWSs) is given and provided relaxation in marks to the candidates belonging to OBC/SC/ST/PwD/Third gender category who have secured at least 50% marks (without rounding off) in Master’s degree or equivalent examination are eligible whereas the candidates belonging to General/Unreserved category, eligibility criteria is 55% marks. A relaxation of upto 5 years is provided to the candidates belonging to OBC-NCL/SC/ST/PwD/Third gender categories and to women applicants.

Ministry of Agriculture & Farmer’s Welfare (MoAFW)

Indian Council of Agricultural Research (ICAR) under MoAFW played an important role in setting the academic standards in agricultural education ecosystem and recently restructured the course curriculum of 13 agriculture and allied disciplines with focus on skill and entrepreneurship development for better employability as per National Education Policy-2020 (NEP-2020). Skill development is pursued through READY (Rural Entrepreneurship Awareness Development Yojna) programme which is designed to provide the desired Hands-on-Training (Skill Development), Rural Awareness Work Experience (RAWE), Plant Training/ Industrial attachment/ Internship and projects to undergraduate students including marginalized and backward classes for their

entrepreneurship development. About 900 Experiential Learning units in the Agricultural Universities (Aus) are providing training related to skill development to all students from marginalized and backward classes and also to develop their entrepreneurial skills for better employment. Total 60,802 number of students have attended training through RAWE during last three years.

Ministry of Micro, Small and Medium Enterprises (M/o MSME)

MoMSME through Entrepreneurship and Skill Development Programs (ESDP) division motivates youth representing different sections of the society including SC/ST/Women, differently abled, Ex-servicemen and BPL persons to consider self-employment or entrepreneurship as one of the career options. The ultimate objective is to promote new enterprises, build capacity of existing MSMEs and inculcate entrepreneurial culture across the length and breadth of the country.

Ministry of Social Justice and Empowerment (MoSJE)

MoSJE launched Ambedkar Social Innovation and Incubation Mission (ASIIM) to foster innovation among SC students, researchers, and those working in Technology Business Incubators (TBIs) and Atal Incubation Centers (AICs) for turning into commercial ventures in sectors like agri-tech, ed-tech, IT, environment, waste management, and green energy etc. Department of Social Justice and Empowerment (DoSJE) has been implementing Central Sector umbrella scheme of “Scholarships for Higher Education for Young Achievers (SHREYAS) for Scheduled Castes (SCs)” for Educational and Entrepreneurial Empowerment and Intra-perineurial Leadership of Talented students from Scheduled Caste communities in 4 sub-Schemes such as Top Class Scholarship for SC students (TCS) scheme which supports meritorious SC students for pursuing higher studies beyond 12th class; Free Coaching for SCs, OBCs and beneficiaries of PM-cares children Scheme to enable them to appear in competitive examinations for obtaining appropriate jobs in Public/Private Sector and/or for securing admission in reputed technical and professional higher education Institution; National Overseas Scholarship (NOS) Scheme provides financial assistance to facilitate the low income meritorious students belonging to the Scheduled Castes, De-notified Nomadic and Semi-Nomadic Tribes, Landless Agricultural Labourers and Traditional Artisans category to obtain higher education; National Fellowship for SC students (NFSC) scheme provides support to Scheduled Caste students for pursuing higher education; Scheme for Implementation of the Rights of Persons with Disabilities Act, 2016 (SIPDA) supports study and research on priority areas of disability sector and R&D of suitable products, aids & appliances for empowerment of persons with disability (PwDs).

Ministry of Education (MoE)

MoE supported Entrepreneurship Development Cell and Incubation Centre to promote the entrepreneurship skills among the marginalised and the backward classes in order to provide them with high levels of education and skilled employment possibilities. NITs/IIEST Shibpur initiated industry-driven programs aiming to train students in work skills (from all sections of students including OBC) and make them employment-ready. As a result, in the last few years, some of the top IT companies in India have started their own academia-industry interface programs.

Ministry of Housing and Urban Affairs (MoHUA)

MoHUA has implemented the “Deendayal Antyodaya Yojana - National Urban Livelihoods Mission (DAY-NULM)” from February 2016 to 30th September, 2024 to provide Employment through Skill Training and Placement (EST&P) component to the urban poor as per the skill demand from the market, so that they can set up self-employment ventures or secure salaried employment. Skill training will be linked to accreditation and certification and preferably be undertaken on a Public-Private-Partnership (PPP) mode. It involves reputed institutes, including ITIs, Polytechnics, NITs, industry associations, engineering colleges, management institutes, skill training centers, foundations, National Skill Development Corporation (NSDC) and other reputed entities in government, private and civil society sectors.

Ministry of Labour & Employment (MoLE)

Directorate General of Employment is implementing the scheme "Welfare of SC/ST job seekers" through the network of 25 National Career Service Centres (NCSC) for SC/STs across the country. The objective of the scheme is to enhance the employability of SC/ST jobseekers through Vocational Guidance, Career Counselling, Computer Training, Pre-recruitment Training etc. Market driven Computer Course trainings are imparted to jobseekers through National Institute of Electronics and Information Technology (NIELIT) with a view to prepare them to meet the demands of the labour market. A Special Coaching programme is also run through local training institutions to prepare SC/ST jobseekers for the Group-C competitive examinations.

Ministry of Culture (MoC)

MoC through National Council of Science Museums (NCSM) popularize science and technology in cities, urban and rural areas to empower different strata of society (science teachers/students/young entrepreneurs/technicians/physically challenged/housewives) through its chain of 26 science museums and science centres across the country. In addition to organization of exhibitions, seminars, popular lectures, science camps, training programmes teachers, young entrepreneurs, physically challenged and also for benefit of students and common man in cities, urban and rural areas, NCSM conducts Mobile science exhibition, displaying interactive exhibits on various scientific themes to remote and aspirational districts for providing students with the latest development on Science & Technology. Science Centres under NCSM also organizes programmes/visits of underprivileged students regularly.

Ministry of Food Processing Industries (MoFPI)

MoFPI through National Institute of Food Technology Entrepreneurship and Management (NIFTEMs) has introduced several measures to promote inclusive education and skill development among marginalized and backward communities such as Skill Development Training Programs for rural youth, women, and farmers to enhance their skills in food processing, value addition, and food safety; Entrepreneurship Development Initiatives to assist small-scale entrepreneurs, including those from SC/ST and OBC categories, in setting up food processing units; Reservation in the Institution to ensure accessibility to quality education to marginalized and backward communities; Scholarships for Underprivileged Students to offer financial assistance to meritorious students from marginalized communities to pursue MTech, and Ph.D. programs.

This information was given by Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space, in a written reply in the Lok Sabha today.

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Parliament Question: Aim Of National Quantum Mission

Source: Press information Bureau, Dt. 26 Mar 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2115324

The Union Cabinet approved the National Quantum Mission (NQM) on 19th April 2023 at a total cost of Rs.6003.65 crore for a period of eight years.

The aims of the mission are:

1. To seed, nurture and scale up scientific and industrial R&D and create vibrant & innovative ecosystem in Quantum Technology (QT).
2. To accelerate QT led economic growth and ecosystem in the country.
3. To be among the leading nations in the development of Quantum Technologies.

The objectives of the mission are:

1. Develop intermediate scale quantum computers with 20-50 physical qubits (3 years), 50-100 physical qubits (5 years) and 50-1000 physical qubits (8 years) in various platforms like superconducting and photonic technology.
2. Develop satellite based secure quantum communications between two ground stations over a range of 2000 kilometers within India as well as long distance secure quantum communications with other countries.
3. Develop inter-city quantum key distribution over 2000 km with trusted nodes using wavelength division multiplexing on existing optical fiber.
4. Develop multi-node Quantum network with quantum memories, entanglement swapping and synchronized quantum repeaters at each node (2-3 nodes).
5. Develop magnetometers with 1 femto-Tesla/sqrt(Hz) sensitivity in atomic systems and better than 1 pico-Tesla/sqrt(Hz) sensitivity in Nitrogen Vacancy-centers;Gravity measurements having sensitivity better than 100 nano-meter/second2 using atoms and Atomic Clocks with 10-19 fractional instability for precision timing, communications and navigation.
6. Design and synthesis of quantum materials such as superconductors, novel Semiconductor structures and topological materials for fabrication of quantum devices for development of qubits for quantum computing and quantum communication applications, single photon sources/detectors, entangled photon sources for quantum communications, sensing and metrological applications.

This information was given by Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space, in a written reply in the Lok Sabha today.

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Scientists Create Compact Laser That Could Revolutionize Chipmaking and Quantum Devices

Source: SciTech Daily, Dt. 26 Mar 2025,
URL: https://scitechdaily.com/scientists-create-compact-laser-that-could-revolutionize-chipmaking-and-quantum-devices/

A new solid-state laser produces 193-nm light for precision chipmaking and even creates vortex beams with orbital angular momentum – a first that could transform quantum tech and manufacturing.

Deep ultraviolet (DUV) lasers, which emit high-energy light at very short wavelengths, play a vital role in areas like semiconductor manufacturing, high-resolution spectroscopy, precision material processing, and quantum technology. Compared to traditional excimer or gas discharge lasers, DUV lasers offer better coherence and lower power consumption, making it possible to build smaller, more efficient systems.

Breakthrough in Solid-State Laser Development

In a recent study published in Advanced Photonics Nexus, researchers from the Chinese Academy of Sciences announced a major breakthrough: a compact solid-state laser system that can generate coherent light at a wavelength of 193 nanometers. This specific wavelength is a key tool in photolithography, the process used to etch detailed patterns onto silicon wafers, which are essential for building modern electronic devices.

How the 193-nm Laser System Works

The new laser system runs at a 6 kHz repetition rate and uses a custom-built Yb:YAG crystal amplifier to produce a base laser at 1030 nm. This laser is split into two paths: one is converted through fourth-harmonic generation into a 258-nm beam with 1.2 watts of output power; the other powers an optical parametric amplifier to generate a 1553-nm beam with 700 milliwatts of power. These two beams are then combined using cascaded lithium triborate (LBO) crystals to produce the target 193-nm light, delivering an average output of 70 milliwatts and a narrow linewidth of under 880 MHz.

First-Ever 193-nm Vortex Beam

The researchers also introduced a spiral phase plate to the 1553-nm beam before frequency mixing, resulting in the generation of a vortex beam carrying orbital angular momentum. This marks the first time a 193-nm vortex beam has been produced from a solid-state laser. Such a beam holds promise for seeding hybrid ArF excimer lasers and could have significant applications in wafer processing, defect inspection, quantum communication, and optical micromanipulation.

Future Potential and Impact

This innovative laser system not only enhances the efficiency and precision of semiconductor lithography but also opens new avenues for advanced manufacturing techniques. The ability to generate a 193-nm vortex beam could lead to further breakthroughs in the field, potentially revolutionizing the way electronic devices are produced.

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