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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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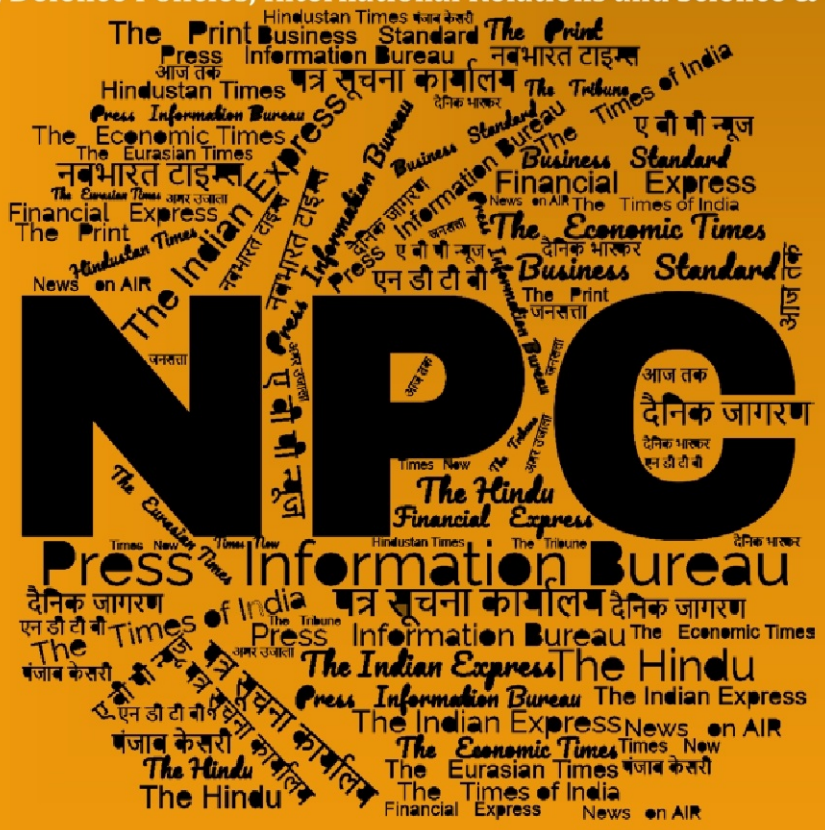

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DRDO News

INMAS organizes International Radio Biology Conference on Biological Effects of Space Radiation, Heavy Ions and Human Space missions

Source: Press Information Bureau, Dt. 27 Feb 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2106625

Institute of Nuclear Medicine & Allied Sciences (INMAS), the Delhi based laboratory of Defence Research and Development Organization (DRDO), is hosting the International Radio Biology Conference on Biological Effects of Space Radiation, Heavy Ions and Human Space missions - Mechanisms & Biomedical Counter measures at the Manekshaw Centre, Delhi during 27th February, 2025 to 1st March 2025. Prof. Ajay Kumar Sood, Principal Scientific Adviser to the Government of India, who was the Chief Guest, inaugurated the conference today on 27th February, 2025. Dr Samir V. Kamat, Secretary, Department of Defence R&D and Chairman, DRDO was the Guests of Honour.

Prof. Ajay Kumar Sood in his inaugural address complimented INMAS for organising the event and said that one of the most significant challenges that in space exploration is the issue of space radiation, which poses a considerable risk to the health and well-being of astronauts during long duration space flights. He appreciated the efforts being made by INMAS in addressing these challenges.

Secretary DDR&D and Chairman DRDO in his address said the challenges associated with space radiation require an integrated approach, combining the expertise of various scientific disciplines. The conference, he said, serves as a unique and important forum for the exchange of knowledge between radiobiologists, physicists, engineers, and medical researchers, among others. It is through such interdisciplinary collaboration that we can develop the innovative technologies and solutions necessary to safeguard the health and well-being of astronauts in the harsh conditions of space, he added.

Dr Samir V. Kamat said that exploring the Outer Space for the benefit of mankind has become a major necessity in modern times. Significant strides have been made, such as long-term human presence on the International Space Station (ISS) and missions to the Moon, which demonstrate our growing ability to sustain life in space. By developing effective strategies and protective measures, the country would be able to ensure the safety and well-being of astronauts, paving the way for successful long-term missions to Mars and beyond.

The three day conference will deliberate upon the topics in line with its theme “Biological Effects of Space Radiation” through theme areas namely, Biomarkers of Exposure/ Susceptibility, Chronic Effects/Carcinogenesis, Combined Stressors (Microgravity, Confinement, Circadian Misalignment, Isolation and Space Radiation), Acute & Late/ Chronic Effects of Heavy Ions, Mathematical

Modelling and Simulation, Medical Countermeasures, Cellular & Molecular Mechanisms, Muscle & Bone Loss, Degenerative Diseases/ Cognition, Heavy Ions Radiation Chemistry.

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DRDO lab working to safeguard Gaganyaan astronauts from space radiation

Source: India Today, Dt. 27 Feb 2025,
URL: https://www.indiatoday.in/amp/science/gaganyaan-mission/story/drdo-lab-working-to-safeguard-gaganyaan-astronauts-from-space-radiation-2686513-2025-02-27

As India prepares to launch Gaganyaan Mission, the Institute of Nuclear Medicine & Allied Sciences (INMAS), a leading DRDO laboratory, is at the forefront of developing cutting-edge technologies to safeguard astronauts from the dangers of space radiation.

This critical effort is being highlighted at an international conference hosted by INMAS from February 27 to March 1, 2025, which brings together experts to address the challenges posed by space radiation and heavy ions.

The conference, inaugurated by Principal Scientific Adviser to the Government of India, Prof. Ajay Kumar Sood, emphasizes the importance of tackling space radiation, a major hurdle in human space exploration.

Dr. Samir V. Kamat, Secretary of the Department of Defence R&D and Chairman of DRDO, underscored the need for an interdisciplinary approach, involving radiobiologists, physicists, engineers, and medical researchers to develop robust biomedical countermeasures.

Key discussions at the conference focus on identifying biomarkers of radiation exposure, understanding chronic effects like carcinogenesis, and employing mathematical modeling to predict radiation outcomes.

Novel strategies, including targeted cellular and molecular interventions, are being explored to mitigate muscle and bone loss and other degenerative effects in space.

Experts agree that innovative protective measures can significantly reduce astronauts' radiation exposure, making them crucial for both current and future missions, including long-term expeditions to Mars. By fostering interdisciplinary dialogue and research, the conference is paving the way for safer and more sustainable human space exploration, ensuring that astronauts can effectively shield themselves from the dangers of space radiation.

This initiative aligns with global efforts to enhance space radiation protection, which include the use of advanced materials like hydrogels and novel shielding technologies.

As space agencies worldwide prepare for deeper space missions, the development of such protective strategies is becoming increasingly vital.

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Private participation to help India turn leader in defence tech: DRDO chief

Source: Business Standard, Dt. 28 Feb 2025,
URL: https://www.business-standard.com/specials/bs-events/private-participation-to-help-india-turn-leader-in-defence-tech-drdo-chief-125022701243_1.html

Participation of the private sector in defence production and research and development (R&D) is essential for India to achieve self-reliance, as well as become a leader in technology, Samir V Kamat, chairman of Defence Research and Development Organisation (DRDO), said on Thursday.

Addressing a panel discussion on 'defence and the private sector – collaboration and coordination' at the Business Standard's 50th anniversary summit in New Delhi, Kamat said, if India has to meet its defence export targets, the only choice is to have private and public sectors work together.

"With disruptive technologies coming in," startups and small and medium enterprises (SMEs) are needed to contribute to innovation in defence. They have more flexibility than large public companies.

"Participation of the private sector has started increasing, and I am sure in the next few years, we will have an equal role of the private and public sectors and government organisations," Kamat said.

The panel was asked questions about what issues were coming in the way of greater private sector participation in defence.

(From left) Rajinder Singh Bhatia, chairman, Kalyani Strategic Systems; R Hari Kumar, former Chief of Naval Staff Admiral (retd); and Samir V Kamat, chairman, DRDO.

This comes at a time when India's largest public sector company in defence, Hindustan Aeronautics Ltd, is seeing a production delay in delivering fighter jets to the Indian Air Force. Kamat's co-panellist, R S Bhatia, chairman, Kalyani Strategic Systems Ltd, said although the DRDO has partnered with the private sector for long, the country's defence industry is yet to see a "level-playing field". He said defence procurement was a "secret document" in the past but now private companies are consulted in such a process.

"We are not against the defence public sector undertakings (PSUs). This is more to do with the foreign-payment terms," he said, adding that the biggest reform that the private sector would ask for is to "cut down" the acquisition process. Bhatia added, "The acquisition cycle cannot be longer than the technology-development cycles."

He also urged that "the silos" be broken when referring to how different organisations and divisions work in the sector. The third panellist, retired Admiral Hari Kumar, a former chief of the Indian Navy, highlighted the problem of funding for defence projects in the private sector. He also said funds that are provided through the relatively recent government programme for defence innovation are inadequate. He added that decisions should be made nimbly, so that the armed forces – the end users – get the best deal.

"We need to make the defence-procurement process simpler," Kumar said. Kamat said acquisition is a long process in India and that the Ministry of Defence has designated this year for reforms. By the end of the year, the sector will have a "much faster acquisition cycle".

He added that when picking partners for projects, the DRDO treats public and private companies equally. "We are partnering with all large companies in India today," he said. Kamat agreed with Bhatia that the "silos must be broken" and "We have to look at the whole-nation approach" rather than working only on the interest of a particular organisation. "We have to look at the bigger picture."

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DRDO to showcase India's defence might in Hyderabad from Feb 28-March 2

Source: Telangana Today, Dt. 27 Feb 2025,
URL: https://telanganatoday.com/drdo-to-showcase-indias-defence-might-in-hyderabad-from-feb-28-march-2

India's Defence might — from the recently-tested hypersonic missile to the majestic battle tank, Arjun, to drones and radars and initiatives into the future warfare — will be on display at the sprawling Gachibowli stadium from February 28 to March 2.

For the first time, the Defence Research and Development Organisation (DRDO) will showcase its prowess on a massive scale for students and the general public through the event 'Vigyan Vaibhav'.

The three-day event, which will be inaugurated by Defence Minister Rajnath Singh on Friday, is being jointly organised by the DRDO, Aeronautical Society of India and Kalam Institute of Youth Excellence as part of Indian National Science Day.

The exhibition will showcase state-of-the-art DRDO and defence aerospace products in about 200 stalls, providing an opportunity to witness technological advancements that are shaping India's future. Short-range ballistic missiles, quick-reaction surface-to-air missiles, and hypersonic glide missiles, besides the latest radar system, will also be displayed.

Defence research labs, defence PSUs and private players are taking part in the event, which also features talks on career prospects in the defence and aerospace sectors, besides interactive sessions with industry experts.

GA Srinivas Murthy, Director, Defence Research and Development Laboratory, said the DRDO will exhibit its indigenously developed missile systems, including recently tested hypersonic missiles, surface-to-surface and surface-to-air missiles, and aerospace technologies to people.

"These are real missiles, which will be on display, but without propulsion and explosives. So far, people might have seen them on television but now they can have first-hand experience," he said.

DRDO DG Missiles U Raja Babu said the event was aimed at attracting the youth to the new technologies. "We have invited 25,000 to 30,000 students for the event where they will get to know various technologies. We will be creating awareness among students on these technologies and help them make informed decisions regarding their career choices," he added. The event is open for registered students on the first day, while the general public can take part on March 1 and 2 between 9 am and 6 pm.

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Defence News

Defence Strategic: National/International

Raksha Mantri Shri Rajnath Singh releases first edition of MoD's bi-annual Hindi magazine 'Sashakt Bharat'

Source: Press Information Bureau, Dt. 27 Feb 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2106587

Raksha Mantri Shri Rajnath Singh released the first edition of Ministry of Defence's bi-annual Hindi magazine *'Sashakt Bharat'* at South Block, New Delhi on February 27, 2025. The magazine comprises poems on the valour, patriotism and sacrifices of the Armed Forces personnel as well as

articles on the policies of the Government written by the personnel of the Ministry, irrespective of their ranks, showcasing inclusivity and unity in diversity.

Raksha Mantri appreciated the efforts of the MoD wing of the Department of Official Language towards promoting Hindi. He stressed on the need to adopt and increase the use of Hindi, describing the language as the thread that binds the social and cultural fabric of India.

The objective of '*Sashakt Bharat*' magazine is to highlight the creative talent of the employees of MoD and encourage them to carry out their day-to-day activities in Hindi. The e-version of the magazine will be available on the official MoD website (Sashakt Bharat Hindi Magazine).

Raksha Rajya Mantri Shri Sanjay Seth, Chief of Defence Staff General Anil Chauhan, Defence Secretary Shri Rajesh Kumar Singh, Secretary (Defence Production) Shri Sanjeev Kumar, Secretary (Ex-servicemen Welfare) Dr Niten Chandra, Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat and other senior officials of MoD were present on the occasion.

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India, China militaries implementing resolutions to end Ladakh conflict in comprehensive, effective manner: Chinese Defence Ministry

Source: The Economic Times, Dt. 27 Feb 2025,
URL: https://economictimes.indiatimes.com/news/defence/india-china-militaries-implementing-resolutions-to-end-ladakh-conflict-in-comprehensive-effective-manner-chinese-defence-ministry/articleshow/118605346.cms

Chinese Defence Ministry on Thursday said the militaries of India and China are implementing the resolutions to end the standoff in eastern Ladakh in a "comprehensive and effective manner." "At present, the Chinese and Indian militaries are implementing the resolutions related to the border areas in a compressive and effective manner," Chinese Defence Ministry Spokesman Sr Col Wu

Qian told a media briefing here, replying to a question on the status of the normalisation of the situation in eastern Ladakh sector.

"We are ready to work with the Indian side to jointly preserve the peace and tranquility in the border areas," he said.

India and China completed the disengagement process late last year after firming up a pact for withdrawal of troops from Depsang and Demchok, the last two friction points in eastern Ladakh ending over four years of freeze in ties.

After finalisation of the pact, Prime Minister Narendra Modi and Chinese President Xi Jinping held talks in Kazan in Russia on October 23. In the meeting, the two sides decided to revive the various dialogue mechanisms.

After that, National Security Advisor Ajit Doval and Chinese Foreign Minister Wang Yi held the 23rd Special Representative (SR) dialogue in Beijing on December 18 last year.

On January 26, Foreign Secretary Vikram Misri travelled to the Chinese capital and held talks with his Chinese counterpart Sun Weidong under the framework of 'Foreign Secretary-Vice Minister' mechanism.

After the series of talks both the countries are in the process of normalising bilateral relations.

India has been maintaining that ties with China cannot be normal unless there is peace in the border areas.

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Trump 2.0 and the new matrix of U.S.-India defence ties

Source: The Hindu, Dt. 28 Feb 2025,
URL: https://www.thehindu.com/opinion/op-ed/trump-20-and-the-new-matrix-of-us-india-defence-ties/article69271449.ece

Prime Minister Narendra Modi’s brief and official working visit on February 13, 2025 to the United States has, rightfully, got a lot of attention. Among other things, it managed to give a push to the U.S.-India bilateral defence engagement. Defence acquisitions will certainly expand interoperability, as the joint statement underscored. Among the agreements announced is about India likely to be proceeding with the purchase and co-production of the ‘Javelin’ Anti-Tank Guided Missile (ATGM) and ‘Stryker’ Infantry Combat Vehicles (ICVs). Co-production of the ‘Javelin’ and the ‘Stryker’ will boost domestic manufacturing and help integrate India more into the supply chain for these systems.

A spectrum

In addition, India is to buy six more P-8I maritime patrol aircraft to augment the Indian Navy’s Maritime Domain Awareness (MDA). New Delhi and Washington will sign a new 10-year Framework for the U.S.-India Major Defense Partnership in the 21st Century. Collaboration in Unmanned Aerial Systems (UAS) and autonomous systems, which includes contracts already underway between Anduril Industries and the Mahindra Group and the co-development by

L3Harris and Bharat Electronics Limited (BEL) of Active Towed Array Systems (ATAS) received a further boost under a fresh initiative announced by Mr. Modi and the U.S. President Donald Trump, dubbed the Autonomous Systems Industry Alliance (ASIA). Greater cooperation following a review is possible in undersea systems and fifth generation fighter aircraft as well as accelerated cooperation in space, air defence, and anti-tank missiles.

India and the U.S. have also agreed to review their existing regulatory regime in arms transfers for more synergy in defence trade, maintenance, repair and overhaul and critical initiations of negotiations for a Reciprocal Defence Procurement (RDP) agreement. Under this, both countries will align their acquisition mechanisms and foster a mutual supply of defence services and goods. All these announcements augur well for deeper defence cooperation between the two countries.

The hurdles

However, challenges persist. One of the critical elements missing in the joint statement was virtually no mention of the urgent delivery of General Electric (GE) Aerospace's F-404 GE-IN-20 engines for the India-made Tejas-Mark 1A fighter aircraft or the delivery and eventual 80% Transfer of Technology (ToT) to India's Hindustan Aeronautics Limited (HAL) for the more advanced GE engine F-414 to power the Mark-II variant of the Tejas. Second, Mr. Trump, in the joint press conference with Mr. Modi, did reiterate (as the joint statement suggests) the possibility of New Delhi purchasing the F-35 Lightning II fighter aircraft.

Integrating the F-35 would be the most difficult to pull off as the Indian Air Force (IAF) has too many persistent gaps, which it is struggling to fill. The IAF's capabilities, especially in the domain of offensive combat air power, require an infusion of ongoing, yet delayed, integration of several fighter aircraft geared for offensive and defensive air, counter air and ground attack missions. These capability deficits include inducting the light-weight Tejas-Mark 1A and the Mark-II jets which are expected to serve as replacements for the MiG-21 squadrons, most of which have been retired. The absence of any word in the joint statement on GE's engine supply for the Tejas is cause for concern due to the dwindling number of IAF fighter squadrons, which could fall to under 30.

There is also an effort to revive the Medium Multi-Role Combat Aircraft (MMRCA) project for 114 multirole fighter aircraft. The project, which was first initiated in the year 2000, underwent several changes till 2004. A new process began in 2007 that led to Dassault's Rafale being selected in 2011-12 for the supply of 114 fighter jets following an extensive and rigorous evaluation process. The French diluted their commitment to ToT, after expressing scepticism about HAL's capacity to meet the rigorous technical standards necessary to build the aircraft. Negotiations tapered off because New Delhi was not ready to pay for the cost of the jets or accept France's terms, eventually settling for 36 Rafale fighters in fly-away condition for $8.8 billion as part of a government-to-government contract.

What a deal with the U.S. would entailIn this context, the Trump administration's latest offer of the F-35 is not new as (the late) Ashton Carter, who was Defence Secretary under the Obama administration, had made a similar bid to sell the fifth generation fighter aircraft. But it would come without an offer of co-production or ToT even if the unit cost of the F-35 jet is currently pegged at $80 million a plane. In contrast, India purchased the Rafale for $244 million a piece, but

with a substantial weapons package consisting of the 300 kilometre range Scalp air to ground cruise missile and the 150 kilometre-range Meteor missiles.

Integrating the F-35 into the IAF is likely to be demanding as it already fields very diverse aircraft, which might leave it incurring fairly substantial infrastructure and maintenance costs as well as a highly intrusive on-site inspection U.S. regime.

More consequentially the IAF and the Government of India will need to consider potential American restrictions on the use of the F-35 that may come with its sale. In a nutshell, while U.S.-India defence cooperation has acquired a stable momentum, there are still some challenges that both sides need to address. The Modi-Trump engagement has prepared a template which should now be used by both sides to move quickly on key deliverables.Harsh V. Pant is Vice President, Observer Research Foundation (ORF), New Delhi.

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इंडियन नेवी का हिस्सा बनेगा दुनिया का सबसे खतरनाक युद्धपोत, ब्रह्मोस की लैस तमाल की ताकत कर देगी हैरान, दोस्त रूस ने किया तैयार

Source: Navbharat Times, Dt. 27 Feb 2025,
URL: https://navbharattimes.indiatimes.com/world/rest-of-europe/indian-navy-ready-for-deadliest-tamal-stealth-missile-frigate-from-russia-can-launch-brahmos-missiles/articleshow/118606654.cms

भारतीय नौसेना को जल्द ही दुनिया का सबसे एडवांस मल्टी-रोल स्टील्थ गाइडेड मिसाइल युद्धपोत 'तमाल' मिलने जा रहा है। रूस में निर्मित यह युद्धपोत भारतीय नौसेना के लिए मील का पत्थर होगा, जो विदेश से भारत में आने वाला आखिरी फ्रिगेट होगा। यह युद्धपोत घातक ब्रह्मोस एंटी-शिप मिसाइल को दाग सकता है। तमाल युद्धपोत 2016 में चार तलवार श्रेणी के स्टील्थ फ्रिगेट्स के निर्माण समझौते का हिस्सा है, जिसमें दो रूस में और दो भारत में बनाये जाने हैं। इस सौदे के तहत दूसरा युद्धपोत अब तैयार है और इसी साल जून में भारतीय नौसेना का हिस्सा बन सकता है।

रूस में बनने वाले दो युद्धपोत में से पहला आईएनएस तुशील पहले ही भारतीय नौसेना में शामिल हो चुका है। रक्षा मंत्री राजनाथ सिंह की रूस यात्रा के दौरान 9 दिसम्बर 2024 को इसे शामिल किया गया था। 12,500 मील की दूरी तय करने और आठ देशों से गुजरने के बाद आईएनएस तुशील सफलतापूर्वक भारत पहुंच गया है।

रूस में चल रहा परीक्षण

अब दूसरे युद्धपोत तमाल का परीक्षण रूस में चल रहा है, जिसके लिए 200 भारतीय नौसेना के कर्मचारी सेंट पीटर्सबर्ग पहुंच चुके हैं। ये परीक्षण लगभग छह सप्ताह तक चलेगा, जिसके बाद तमाल को भारत की यात्रा के लिए तैयार किया जाएगा। एक बार जब युद्धपोत आधिकारिक रूप से नौसेना का हिस्सा बन जाएगा, इसके बाद इंडियन नेवी का एक दल इसे लेकर स्वदेश जाएगा।

ब्रह्मोस मिसाइल से होगा लैस

एक धारदार तलवार के आकार के युद्धपोत तमाल को सटीक हमलों और उच्च गतिशीलता के लिए डिजाइन किया गया है। यह 30 नॉट्स (55 किमी प्रतिघंटा) की रफ्तार से समुद्र में आगे बढ़ सकता है। एक मिशन में यह 3000 किलोमीटर तक ऑपरेशन को अंजाम दे सकता है। इसे ब्रह्मोस मिसाइल से लैस किया जा सता है। यानी यह युद्धपोत सुपरसोनिक मिसाइल दाग सकता है। इस तरह यह दुश्मन के जहाज के लिए बड़ा खतरा बन जाता है।

पानी के अंदर पनडुब्बी जैसे खतरे से निपटने के लिए यह एडवांस एंटी–सबमरीन और टारपीडो से लैस है। इस पर मल्टी–रोल हेलीकॉप्टर की तैनाती की जा सकती है, जो इसे निगरानी और लड़ाकू मिशनों के लिए और खास बनाता है। इसके साथ ही यह दुश्मन के रेडार से खुद को बचाने में भी सक्षम है।

बाहर से आने वाला आखिरी युद्धपोत

नौसेना ने कहा है कि तमाल विदेश से खरीदा जाने वाला आखिरी युद्धपोत होगा। यह भारत की स्वदेशी युद्धपोत क्षमताओं में महत्वपूर्ण प्रगति को दिखाता है। भारत 2003 से तलवार श्रेणी के युद्धपोत का संचालन कर रहा है, जिनमें से छह वर्तमान सेवा में हैं। इनमें से चार को पहले ही ब्रह्मोस मिसाइलों से लैस किया जा चुका है। वहीं, बाकी दो को अपग्रेड किया जा रहा है।

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India looks to formalise defence cooperation with EU in Indo-Pacific

Source: The Times of India, Dt. 28 Feb 2025,
URL: https://timesofindia.indiatimes.com/india/india-looks-to-formalise-defence-ties-with-eu-in-indo-pacific/articleshow/118609765.cms

While PM Narendra Modi and visiting European Commission President Ursula von der Leyen will look to boost ongoing efforts for an India-EU Free Trade Agreement (FTA), both sides are also likely to discuss ways to formalise defence and security cooperation in the Indo-Pacific. This is of particular interest to India as it encourages the EU to become more involved in the region, in favour of freedom, transparency and a rules-based order.

As the EU leader landed Thursday, describing India as a friend and a strategic ally, government sources here said the visit had been in the works for the past 6 months, or since both leaders were re-elected last year, and has nothing to do with the EU's strained alliance with the US under President Donald Trump. On her third visit to India, von der Leyen is accompanied by the EU College of Commissioners.

According to Indian authorities, the visit will see significant progress in efforts to ramp up cooperation in areas like technology, particularly AI, green energy, space and defence, even if no major agreement is signed after the meeting that will be followed by a joint statement. Modi's engagement with von der Leyen and the second meeting of the India-EU Trade and Technology Council during the visit is expected to clear the path for the India-EU summit later this year.

Ahead of the talks, official sources here said the EU is showing interest in defence cooperation with India in the Indo-Pacific and the 2 sides have had "informal coordination" between their forces so far. "We might have discussions to formalise this cooperation," said a government

source, speaking on condition of anonymity. EU adopted an Indo-Pacific strategy in 2021, and has since worked to enhance its engagement with like-minded countries in the region, but it's often seen as lacking coherence.

Significantly though, in 2023, it appointed a military adviser in India for the first time. According to the Indian government, India and EU are strengthening their defence cooperation under the EU co-funded Enhancing Security Cooperation In and With Asia (ESIWA) programme and it's expected to come up for further discussions on Friday. They have also conducted joint naval exercise in the past, like in the Gulf of Guinea in 2023.

In an interview to TOI ahead of her arrival, von der Leyen sought a reinforcement of the EU's defence and security cooperation with India, saying it will work with India and other countries to uphold the rules-based order in the region. While discussing Europe's focus on Ukraine, external affairs minister S Jaishankar has on several occasions accused the West of looking the other way when the same order was under stress in the Indo-Pacific.

Modi and von der Leyen will also discuss recent developments related to Ukraine, particularly Trump's talks with Russia to end the war in which he didn't involve either Europe or Ukraine. The EU leader is expected to engage India on the issue, while briefing Modi about her visit to Kyiv this week, Indian officials here reiterated India's position: both parties must resort to dialogue and diplomacy as no solution can be found on the battlefield.

On Friday, the 2 sides will have a plenary session that will be chaired by von der Leyen and Modi, while the College Members will also meet their counterparts individually. According to the EU, India is its largest trading partner, with trade in goods valued at €124 billion in 2023.

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Foreign Lobbying or Atmanirbharta? The US Army Stryker vs DRDO's WhAP 8x8 Controversy Explained

Source: Republic World, Dt. 27 Feb 2025,
URL: https://www.republicworld.com/defence/indian-armed-forces/foreign-lobbying-or-atmanirbharta-the-us-army-stryker-vs-drdo-s-whap-8x8-controversy-explained

In yet another example of how lobbying can override operational merit, efforts are underway to push the U.S. Stryker Infantry Fighting Vehicle (IFV) into the Indian Army, despite its outright failure in high-altitude trials. Powered by a Caterpillar C7 360 hp engine, the Stryker proved to be underpowered for operations in India's mountainous terrain, a critical factor in any potential conflict with adversaries like China and Pakistan.

Despite this, efforts are being made to introduce the Stryker into the Indian Army through a government-to-government (G2G) deal, disregarding the availability of the superior WhAP 8x8 Amphibious Wheeled Armored Platform, which is both indigenously developed and far more suited for India's combat needs.

Why the Stryker Fails in Indian Conditions

The Stryker, developed by General Dynamics Land Systems (GDLS), was designed to fit the U.S. Army's need for a medium-weight brigade combat team (BCT) that could bridge the gap between heavy and light forces. However, this American battlefield doctrine is not optimized for India's operational requirements, especially high-altitude warfare. The vehicle has a four-wheel drive (8×4) mode, with an option to switch to all-wheel drive (8×8), but lacks the engine power needed for rough, high-altitude conditions like those in Ladakh or Arunachal Pradesh.

Unlike tracked combat vehicles, which excel in off-road mobility, load capacity, and combat durability, the Stryker's wheeled configuration makes it unsuitable for rugged Himalayan terrain. Even in controlled trials, it failed to meet the operational demands that the Indian Army requires from an armoured combat vehicle. Moreover, while the Stryker's ability to alter tyre pressure for different terrains is useful, it is not a substitute for tracked vehicle manoeuvrability in extreme conditions. The US Army adopted the Stryker due to its logistical simplicity, but this advantage does not translate well to the Indian Army's requirements.

The Indigenous WhAP: A Superior Alternative

Instead of importing an underperforming foreign system, India already has a far superior, homegrown alternative in the WhAP 8x8 Amphibious Wheeled Armored Platform, developed by Tata Advanced Systems in partnership with DRDO.

The WhAP is designed to provide modularity, scalability, and reconfigurability—three key attributes that make it highly adaptable for various combat roles. Unlike the Stryker, which was designed primarily for the U.S. Army's expeditionary warfare model, the WhAP was built from the ground up for Indian conditions, taking into account high-altitude operations, amphibious warfare, and rapid mobility across diverse terrains.

Key Advantages of WhAP Over Stryker

The WhAP 8x8 is designed for multiple combat roles, including:

- Wheeled Armored Personnel Carrier (APC)
- 30mm Infantry Combat Vehicle (ICV)
- 105mm Light Tank
- Command Post Vehicle
- 120mm Mortar Carrier
- CBRN Protection Vehicle
- Ambulance & Special Purpose Platforms

Unlike the Stryker, which requires different variants for different roles, WhAP's modular design allows seamless adaptation, making it a cost-effective and operationally superior platform for the Indian Army.

Furthermore, the WhAP features steel armour plates and lightweight composite armour, giving it excellent ballistic protection against enemy fire and mine blasts. Additionally, it can be armed with 7.62mm or 12.7mm Remote-Controlled Weapon Stations (RCWS), offering more flexibility in combat.

Designed for Indian Terrain – Unlike the Stryker, which struggled in high-altitude trials, the WhAP has proven mobility in muddy, slushy, and rugged terrains. It can easily manoeuvre through difficult landscapes, making it ideal for border regions like Ladakh, Arunachal Pradesh, and the desert terrains of Rajasthan.

Amphibious Capability – The WhAP is fully amphibious, meaning it can operate both on land and water—a feature the Stryker lacks. This gives the WhAP a strategic advantage in riverine operations, amphibious assaults, and disaster relief missions.

Atmanirbhar Bharat Initiative – Over 80% of WhAP's components and subsystems are sourced locally, boosting the domestic defence industry. This aligns with India's self-reliance push under Atmanirbhar Bharat, reducing dependency on foreign defence suppliers. On the other hand, the Stryker procurement would funnel money into American defence contractors, while offering inferior battlefield utility for the Indian Army.

Is the Stryker Being Forced on the Indian Army?

Despite the Indian Army's reluctance to induct the Stryker, intense lobbying efforts are underway to introduce it through a G2G (Government-to-Government) deal with the United States. Such a deal, if pushed through, could bypass competitive trials and force the Indian Army to adopt an inferior platform that does not meet its operational requirements.

This raises serious concerns:

1. Why should India invest in a foreign system that failed in trials when a superior indigenous alternative exists?
2. Is the push for the Stryker driven by strategic necessity or political and corporate interests?
3. How does an expensive foreign acquisition align with the goals of Atmanirbhar Bharat?

The Indian Army's combat requirements should dictate procurement decisions, not diplomatic pressure or foreign defence contractor lobbying. While defence ties with the United States are crucial, they should not come at the cost of India's operational effectiveness or self-reliance in military manufacturing.

The Bottom Line: WhAP is the Future, Not the Stryker

If the goal is to build a modern, self-reliant, and battle-ready force, then WhAP—not the Stryker—should be the backbone of India's mechanized infantry. Any move to induct the Stryker against the Army's own assessments would be a strategic blunder, driven not by military logic, but by external influence.

India's defense modernization should focus on combat effectiveness, adaptability, and indigenous development, rather than relying on imported, underperforming systems. The WhAP 8x8 is the clear winner in terms of mobility, protection, firepower, and cost-effectiveness. Inducting an underpowered and unsuitable platform like the Stryker goes against India's long-term strategic interests.

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Why The Latest Test Of India's Naval Anti-Ship Missile Was More Significant Than You Thought

Source: Swarajya, Dt. 27 Feb 2025,
URL: https://swarajyamag.com/defence/why-the-latest-test-of-indias-naval-anti-ship-missile-was-more-significant-than-you-thought

The NASM-SR was first tested in 2022, when it successfully demonstrated its sea-skimming capability.

On 25 February 2025, the Defence Research and Development Organisation (DRDO) and the Indian Navy successfully carried out flight trials of the Naval Anti-Ship Missile–Short Range (NASM-SR) at the Integrated Test Range (ITR) in Chandipur.

This missile, India's first indigenous air-launched anti-ship missile, is intended to replace the aging Sea Eagle missiles, which have been in service on Sea King Mk.42B helicopters since the 1980s. It reportedly has a range of 55 kilometres.

The NASM-SR was first tested in 2022, where it successfully demonstrated its sea-skimming capability, maintaining an altitude of just 5 meters above sea level before hitting its target with high accuracy.

During the latest test, NASM-SR was launched in Bearing-only Lock-on after Launch mode, meaning it did not have a pre-selected target before launch.

Once airborne, the missile began scanning a predefined search area using its onboard sensors to detect potential targets. It initially locked onto a larger target within this zone based on programmed parameters.

As the missile continued its flight, a high-bandwidth two-way datalink transmitted real-time data, including live images from its Indigenous Imaging Infra-Red (IIR) Seeker, back to the pilot. This allowed the pilot to monitor the missile's trajectory and assess the detected targets in real-time. The Man-in-Loop feature enabled the pilot to intervene and make targeting decisions mid-flight.

Approaching the initially selected large target, the pilot identified a smaller, hidden target within the vicinity. Using the datalink system, the pilot commanded the missile to shift its lock from the larger object to this concealed target. The missile's onboard guidance system immediately adjusted its flight path, redirecting itself toward the new target.

As the missile entered the terminal phase, the IIR seeker provided continuous target updates, allowing for refined trajectory adjustments. This ensured the missile maintained its lock and struck the smaller target with high precision, validating its ability to engage dynamic threats with in-flight retargeting.

"The missile uses an indigenous Fiber Optic Gyroscope-based INS and Radio Altimeter for its Mid-course guidance, an Integrated avionics module, Electro-Mechanical actuators for Aerodynamic and Jet vane control, thermal batteries and PCB warhead. It uses solid propulsion

with an in-line ejectable booster and a long-burn sustainer," the Ministry of Defence said in a statement released after the test.

As India plans to retire its fleet of Sea King helicopters over the next few years, the NASM-SR to be integrated with platforms like the Sikorsky MH-60R and Hindustan Aeronautics Dhruv.

Adani Defence & Aerospace is responsible for its manufacturing.

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Science & Technology News

National Science Day 2025

Source: Press Information Bureau, Dt. 27 Feb 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2106574

National Science Day is celebrated every year on 28th February to commemorate the discovery of the 'Raman Effect' made by the eminent physicist Sir C.V. Raman while working in the laboratory of the Indian Association for the Cultivation of Science, Kolkata. For this discovery, he was awarded the Nobel Prize in 1930. On National Science Day, theme-based science communication activities are carried out all over the country. The first celebration took place on February 28, 1987, marking the beginning of a tradition that continues to inspire generations. The theme for this year is "Empowering Indian Youth for Global Leadership in Science & Innovation for VIKSIT BHARAT." It emphasizes the role of young minds in driving India's scientific and technological progress, aligning with the vision of Viksit Bharat 2047, which aims for a developed and self-reliant India.

Objectives

The basic objective of the observation of National Science Day is to spread the message of the importance of science and its application among the people. It is celebrated as one of the main science festivals in India every year with the following objectives:

- To widely spread a message about the significance of scientific applications in the daily lives of people.
- To display all the activities, efforts, and achievements in the field of science for the welfare of human beings
- To discuss all the issues and implement new technologies for the development of science
- To encourage the people as well as popularize science and technology.

Key advancements in Science and Technology: 2024 Highlights

India's Global Standing in Innovation and IP

India has made remarkable progress in the global science and technology landscape, securing the 39th rank in the Global Innovation Index 2024 and 6th position in global Intellectual Property (IP) filings, as per the WIPO report. The Network Readiness Index (NRI) 2024 also marked India's rise to 49th place from 79th in 2019, showcasing advancements in ICT infrastructure and digital transformation.

Anusandhan National Research Foundation (ANRF): Pioneering Research & Inclusivity

Launched under the ANRF Act 2023, the Anusandhan National Research Foundation (ANRF) is accelerating India's research and development ecosystem. Several key programs have been introduced:

- PM Early Career Research Grant (PMECRG) supports young researchers, providing them with the resources to pursue independent research.
- EV Mission aims to foster innovation in electric vehicle technology, making India self-reliant in sustainable mobility.
- Partnerships for Accelerated Innovation and Research (PAIR) follows a Hub and Spoke model, ensuring institutional collaboration in scientific research.
- Inclusivity Research Grant (IRG) provides financial support to researchers from Scheduled Castes (SC) and Scheduled Tribes (ST), promoting equal opportunities in frontier research fields.

National Quantum Mission (NQM): India's Leap in Quantum Technology

With an investment of ₹6003.65 crore over eight years, the National Quantum Mission (NQM) is positioning India as a leader in quantum computing, communication, sensing, and materials.

- A total of 152 researchers from 43 institutions across 17 states and 2 Union Territories are contributing to this mission.
- NQM has also laid out guidelines for startup support, ensuring robust mentorship, funding, and resource allocation.

National Supercomputing Mission (NSM): Expanding India's Computational Power

India's supercomputing infrastructure has significantly expanded, reaching 32 PetaFlops with the addition of 5 PetaFlops in 2024. The largest supercomputing system, commissioned at the Inter-University Accelerator Centre (IUAC), New Delhi, boasts 3 PetaFlops of computing power. Additional supercomputers at NCRA-Pune and SN Bose Institute-Kolkata further strengthen computational research.

- The future roadmap includes adding 45 more PetaFlops, pushing India's supercomputing capabilities to 77 PetaFlops using indigenous technology.

Artificial Intelligence & Cyber-Physical Systems: BharatGen and Beyond

Under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), the BharatGen initiative has been launched, focusing on the development of India's first multimodal, multilingual Large Language Model (LLM) for Generative AI (GenAI).

- The I-HUB Quantum Technology Foundation, IISER Pune, has selected eight startups for funding, accelerating research in quantum communication, computing, and sensing.
- Plans are underway to upgrade four top-performing Technology Innovation Hubs (TIHs) into Technology Translation Research Parks (TTRPs), boosting commercialization efforts.

Geospatial Science: Expanding Spatial Thinking and Innovation

Geospatial technology adoption has increased through Spatial Thinking Programs in Schools, covering 116 schools across seven states and reaching 6205 students. Additionally, 575 participants have received training in geospatial science through Summer/Winter Schools. Future plans include expanding the program to five additional states and organizing a national event to showcase research and innovation in this field.

Climate Research and Risk Mapping for Disaster Preparedness

India has intensified its efforts in climate resilience, launching four new Centres of Excellence focused on risk mapping for floods and droughts. These initiatives aim to enhance disaster preparedness and climate adaptation strategies across the country.

Technology Development Board (TDB): Funding Innovation for Future Growth

The Technology Development Board (TDB) has provided ₹220.73 crore in funding across seven key projects, accelerating advancements in critical technological sectors. This initiative ensures that startups and innovators receive the necessary financial and infrastructural support to scale their ideas.

Innovation in Science Pursuit for Inspired Research (INSPIRE): Nurturing Scientific Talent

The INSPIRE program, a flagship initiative of the Department of Science & Technology (DST), aims to attract and support young talent in science and research. It fosters innovation across disciplines, including engineering, medicine, agriculture, and veterinary sciences, strengthening India's S&T and R&D ecosystem.

Key Achievements in 2024:

- 34343 INSPIRE Scholars, 3363 INSPIRE Fellows, and 316 INSPIRE Faculty Fellows received financial support to pursue higher education and research in Science & Technology.
- 9 INSPIRE Fellows showcased their research at the 15th JSPS-HOPE Meeting in Kyoto, Japan (Feb 26 - Mar 1, 2024).
- INSPIRE Faculty Fellowship intake increased from 100 to 150 per year to support more postdoctoral researchers.
- The 11th National Level Exhibition and Project Competition (NLEPC) was held in September 2024 at Pragati Maidan, New Delhi, attracting 10,000 students. The Winners Felicitation Ceremony honored 31 students from 350 finalists at Vigyan Bhavan, New Delhi.
- A record-breaking 10,13,157 nominations were received for INSPIRE-MANAK, marking a milestone of one million entries from schools in 2024-25.
- A new initiative, "Exposure Visit of Japanese School Students to India," was launched under INSPIRE-MANAK. In August 2024, 10 Japanese students and 2 supervisors visited India to explore advancements in science, technology, industry, and culture.

Future Vision for 2025:

From 2025 onwards, the INSPIRE-MANAK scheme will expand its reach to Class 11 and 12 students, ensuring that more young minds are engaged in scientific innovation at a crucial stage of their education. This initiative is expected to strengthen India's scientific workforce and global leadership in research and development.

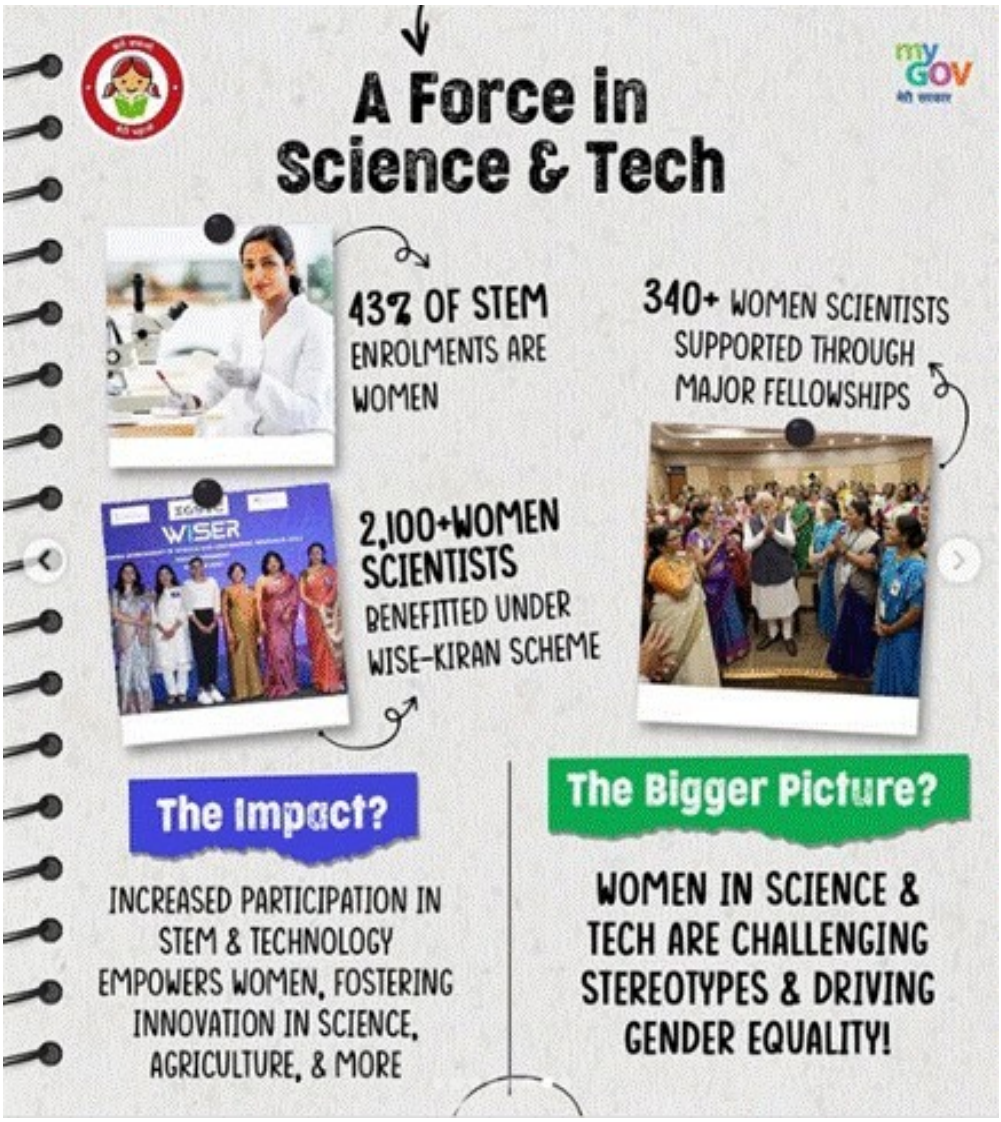
Bridging the Gender Gap: Empowering Women to Lead in Science

India has taken significant steps to promote gender parity in STEM. The Department of Science and Technology (DST) has recently implemented the WISE-KIRAN (Women in Science and Engineering-KIRAN) scheme, a comprehensive program designed to support women at various stages of their scientific careers.

Key Initiatives:

- WISE-PhD and WISE-Post Doctoral Fellowship (WISE-PDF): Encourages women to pursue research in basic and applied sciences. More than 340 women scientists have been selected under 3 major fellowship programmes namely, WISE-PhD, WISE-PDF and WIDUSHI to carry out research in Basic and Applied Sciences.
- Launched two new programmes namely, Women’s International Grants Support (WINGS) for research training in international labs and Women Leadership Programme for early and mid-level women scientists.
- Vigyan Jyoti Program: Encourages female students to pursue higher education and careers in STEM (Science, Technology, Engineering, Mathematics, and Medicine). Under Vigyan Jyoti, more than 29,000 girls of Class IX-XII from 300 Districts of 34 States/UTs of the country benefitted through various activities and interventions.

- Under the CURIE (Consolidation of University Research for Innovation and Excellence) Programme, 22 Women PG Colleges have been selected to establish state-of-the-art research facilities.



The Glorious Heritage

Ancient India was a land of sages and seers as well as a land of scholars and scientists. Research has shown that from making the best steel in the world to teaching the world to count, India was actively contributing to the field of and technology centuries long before modern laboratories were set up.

Driving Innovation for a Brighter Future

National Science Day celebrates India's scientific progress and commitment to innovation. With advancements in quantum computing, AI, geospatial technology, and climate research, alongside initiatives fostering inclusivity and young talent, India is shaping a future driven by science and technology. As the nation moves towards Viksit Bharat 2047, continued investment in research and innovation will be key to global leadership and sustainable growth.

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What instruments will NASA's Lunar Trailblazer use to search for water on Moon?

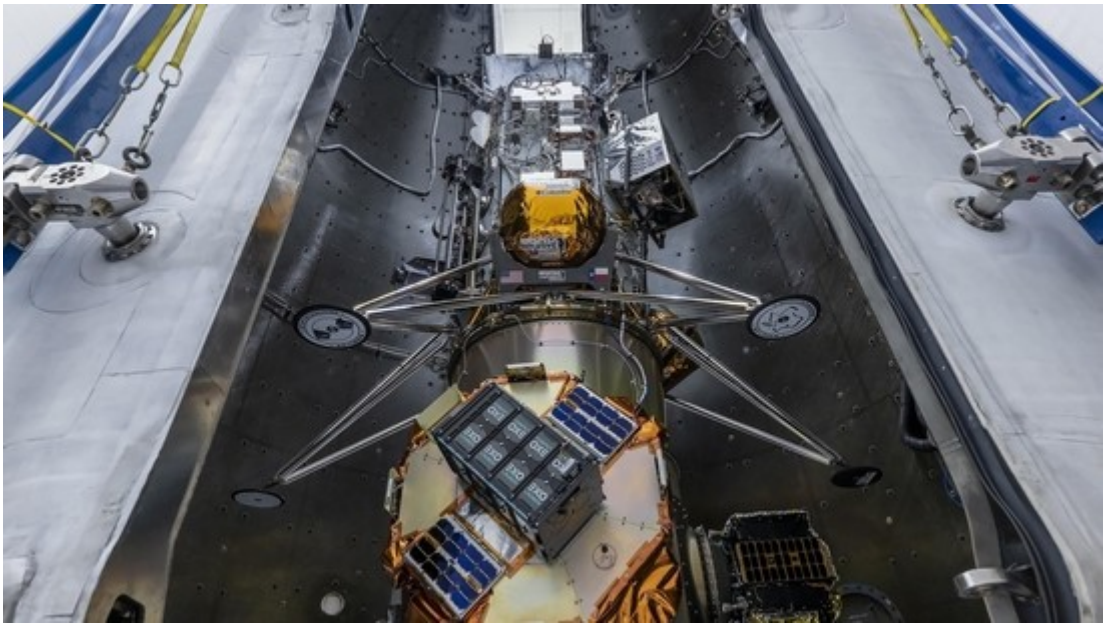
Source: Hindustan Times, Dt. 28 Feb 2025,
URL: https://www.hindustantimes.com/world-news/what-instruments-will-nasa-s-lunar-trailblazer-use-to-search-for-water-on-moon-101740707849587.html

NASA launched the Lunar Trailblazer spacecraft on Wednesday aboard a SpaceX Falcon 9 rocket, sending it on a mission to explore the Moon's south pole. The spacecraft aims to determine the presence of different forms of water on the lunar surface.

As part of the mission, Intuitive Machines' lunar lander is set to land on March 6 at Mons Mouton, a plateau near the Moon's south pole.

The lander carries scientific instruments under NASA's CLPS (Commercial Lunar Payload Services) initiative and the Artemis campaign. The IM-2 mission will collect critical data about the

Moon, supporting future astronaut exploration and advancing space exploration for humanity's benefit, according to NASA.



In this undated image released by NASA, Intuitive Machines' newest lunar lander is seen attached to a SpaceX Falcon rocket.

What is the aim?

- NASA's CLPS missions will conduct one of the first on-site demonstrations of resource utilisation on the Moon by measuring the potential presence of volatiles or gases in lunar soil.
- A passive Laser Retroreflector Array mounted on the lander's top deck will reflect laser light, providing future orbiting or incoming spacecraft with a permanent reference point on the lunar surface.
- The mission will also test a surface communications system and deploy a propulsive drone capable of hopping across the lunar surface for exploration.
- NASA's Lunar Trailblazer spacecraft, launched with the IM-2 mission, will enter lunar orbit to map the distribution of water in various forms and track how it changes over time.
- The mission aligns with NASA's Artemis campaign, aiming to study planetary processes, search for lunar water and resources, and support long-term human exploration on the Moon.

Key instruments aboard the IM-2 mission

Polar Resources Ice Mining Experiment-1 (PRIME-1): This experiment aims to explore the Moon's subsurface and identify potential resources. It consists of two key instruments: the Regolith and Ice Drill for Exploring New Terrains (TRIDENT), which drills into the lunar surface to collect soil samples, and the Mass Spectrometer Observing Lunar Operations (MSolo), which analyses the samples to detect volatile compounds that turn into gas. The data collected will help scientists understand the Moon's surface composition and guide future resource utilisation.

Laser Retroreflector Array (LRA): This instrument includes a set of eight retroreflectors designed to enable precision laser ranging, which measures the distance between the spacecraft and the lander. The LRA is a passive optical device that will serve as a permanent location marker on the Moon, aiding future missions in navigation and scientific studies for decades.

Micro Nova Hopper: Developed under NASA's Space Technology Mission Directorate Tipping Point initiative, this autonomous drone, Grace, is designed for high-resolution surveying of the lunar surface. It will hop into a nearby crater to collect scientific data and send it back to the lander. The hopper is expected to explore permanently shadowed regions, offering new insights into areas that could hold key information for sustaining human presence on the Moon.

Nokia Lunar Surface Communications System (LSCS): This advanced 4G/LTE communication system, developed with NASA funding, will facilitate connectivity between the Intuitive Machines lander, a Lunar Outpost rover, and the Micro Nova hopper. The LSCS is engineered to transmit high-definition video, command messages, and telemetry data. It aims to demonstrate a compact, efficient communication network that could support future lunar missions and space infrastructure.

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