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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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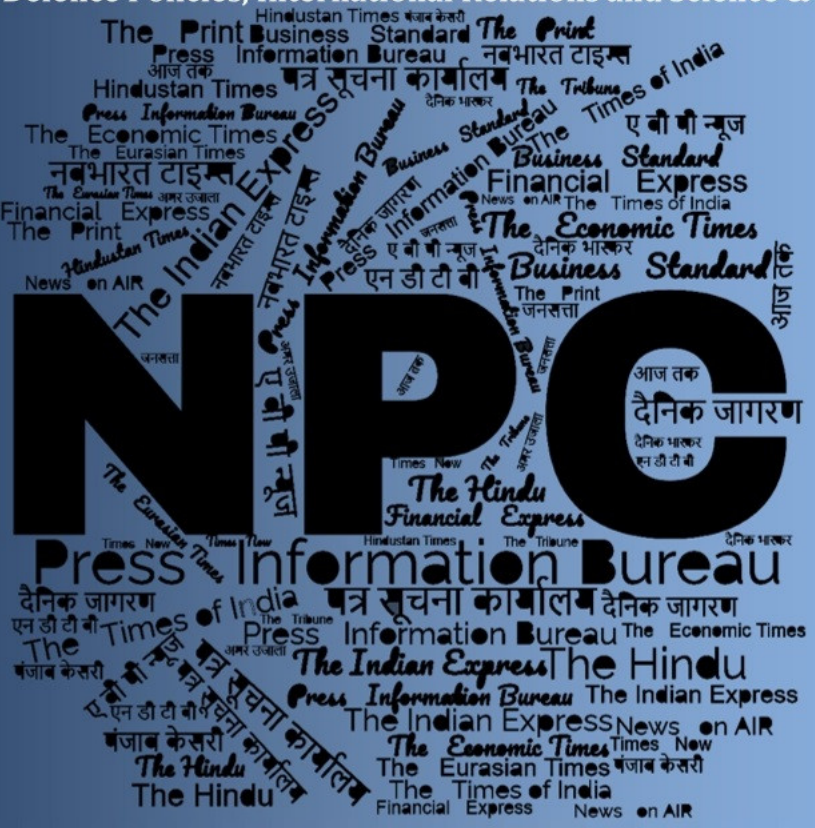

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Defence News

Trade, defence on table as PM Modi meets Lula today

Source: The Indian Express, Dt. 21 Feb 2026

Prime Minister Narendra Modi will meet the visiting President of Brazil Luiz Inácio Lula da Silva on Saturday, with an objective of strengthening ties in trade, critical minerals, defence, energy and digital tech. The two sides are likely to also sign a pact between Embraer and Adani Defense & Aerospace for the Construction of an E175 Aircraft Final Assembly Line in India. President Lula, who participated in the AI Impact Summit, will also meet President Droupadi Murmu, Vice-President C P Radhakrishnan and External Affairs Minister S Jaishankar. He will also pay tribute to Mahatma Gandhi in Rajghat.

The two leaders have maintained a channel of communication in the last few years as Modi and Lula spoke on telephone on January 22 this year focusing on the Venezuelan situation after the capture of President Nicolas Maduro by the US government. This is Lula's second visit to India — he had last visited Delhi for the G20 leaders summit in September 2023. Last year, in July 2025, the State Visit of Prime Minister Modi to Brasilia (7-8 July 2025) was the second ever bilateral visit by the Prime Minister of India, taking place after a gap of 57 years.

President Lula and Prime Minister Modi held a bilateral meeting on the sidelines of the G20 Leaders' Summit in Rio de Janeiro in November 2024. Both PM Modi and President Lula had a telephonic conversation on 7 August 2025 focusing on trade related matters due to US tariffs. In June 2025, the two leaders interacted on the sidelines of G7, Canada. In May 2025, President Lula called PM extending support and solidarity with India in the aftermath of the Pahalgam terrorist attack.

According to Indian officials, India and Brazil share a close and multifaceted relationship which was elevated to Strategic Partnership in 2006. Both countries also enjoy an excellent cooperation in plurilateral fora such as BRICS, IBSA, G20, G-4, International Solar Alliance, Global Biofuel Alliance, Coalition for Disaster Resilience Infrastructure as well as in the larger multilateral bodies such as the UN, WTO, UNESCO and WIPO. During bilateral talks in the PM's State visit to Brasilia in July 2025, both leaders agreed to establish a Review Mechanism at the Trade Minister's level. They also announced a bilateral trade target of US$ 20 billion, to be achieved by 2030.

As Strategic Partners, India and Brazil have several Institutional mechanisms to coordinate such as Joint Commission Meeting (Foreign Minister level), Strategic Dialogue (NSA), Foreign Office Consultations (Secretary), Trade Monitoring Mechanism (TMM), Economic and Financial Dialogue, Dialogue on Consular and Mobility Issues, Joint Defence Committee, Joint Committee on Science & Technology and India-Brazil Business Leaders Forum.

India-Brazil defence ties

A defence cooperation agreement was signed in 2003, was ratified in 2006, which created a Joint Defence Committee (JDC) as institutional mechanism. Over the last few years, engagement between the defence forces of both countries has grown significantly. This is expected to get a fillip during this visit. On trade and Investment, in calendar year 2025, bilateral trade reached USD 15.21 billion (increase of over 25%), with Indian exports to Brazil amounting to USD 8.35 billion and imports from Brazil totaling USD 6.85 billion.

Total Indian investment in Brazil is estimated at more than USD 15 billion. During the visit of the Vice-President of Brazil in Oct 25, a Joint Declaration was issued to launch negotiations for substantial and significant expansion of the India-MERCOSUR PTA. The two sides will take stock on the progress of negotiations in this regard.

https://indianexpress.com/article/india/trade-defence-on-table-as-pm-modi-meets-lula-today-10543438/

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PM set for Israel visit, defence deals on table

Source: The Times of India, Dt. 23 Feb 2026

Against the backdrop of last year's Operation Sindoor, India is eyeing Israel's advanced drones, long-range missiles and laser-based defence systems in order to integrate them into its security infrastructure and create an "impregnable" multi-layered shield that can thwart any Pakistan attack through missiles, drones and airstrikes in future. While India's DRDO has developed a 30-kW high-energy laser-based Directed Energy Weapon (DEW), known as Mk-II(A) system, Israel has started deploying 'Iron Beam', a 100kW-class high-energy laser weapon system, to complement its Iron Dome missile shield. Iron Beam can intercept drones, rockets and mortars at a cost of only a few dollars per shot.

It is expected that these defence plans will be concretised during PM Modi's two-day visit to Israel starting Wednesday. An MoU on security cooperation is expected to be signed during Modi's visit, his second trip to Israel after 2017. Besides defence purchases, India is focussing on transfer of advanced weapon technologies.

On Sunday, Israel PM Benjamin Netanyahu said, "PM Modi will deliver a speech in the Knesset. The fabric of this relationship has grown tighter, and he is coming here so that we can tighten it further through a series of decisions related to strengthening cooperation between our govts and countries.

This includes economic, diplomatic and security cooperation." Hinting at the formation of a security alliance, Netanyahu said, "We will create an entire system, essentially a 'hexagon' of alliances around or within the Middle East. This includes India, Arab nations, African nations, Mediterranean nations (Greece and Cyprus) and nations in Asia."

India is developing an indigenous, multi-layered air defence system, 'Sudarshan Chakra', aimed at protecting cities and vital installations from missile and drone threats by 2035. The country is, therefore, collaborating with Israel to incorporate technologies similar to Iron Dome, Arrow and David's Sling systems. The initiative will integrate Barak-8 MR-SAM/LR-SAM with AI, advanced sensors and cyber-defence systems.

The new MoU will follow an MoU that was signed last Nov during defence secretary Rajesh Kumar Singh's Israel visit when both sides decided to boost defence ties through joint development and co-production of advanced technologies. During Op Sindoor, India had used a host of Israeli weapons like Rampage missiles, Harpy (loitering munition called Kamikaze drone) and Harop kamikaze loitering munition against Pakistan's terror targets and military assets.

According to a Forbes India report, Israel has agreed to arms deals worth $8.6 billion with India in 2026, making it India's biggest weapons supplier after France. The $8.6 billion deals include,

according to the report, SPICE 1000 precision guidance bombs manufactured by Rafael, Rampage air-to-surface missiles (250 km range), Air Lora air-launched ballistic missiles and IceBreaker missile system (300km range).

https://timesofindia.indiatimes.com/defence/news/india-plans-to-buy-israels-advanced-drones-missiles-laser-defence-systems-pms-israel-visit-likely-to-see-mou-on-def-cooperation-being-inked/articleshow/128690624.cms

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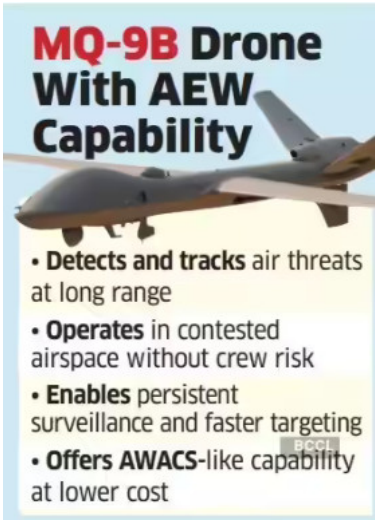
General Atomics open to offering MQ9B UAVs with airborne early warning, says Chief Executive Vivek Lall

Source: The Economic Times, Dt. 23 Feb 2026

General Atomics, which already has a $3b deal with India to supply armed 31 Sea/SkyGuardian MQ9B UAVs, is open to offering India its soon-to-be launched MQ9B version with Airborne Early Warning (AEW) capabilities as an option to improve upon the aircraft-based AWACS, GA Global Chief Executive Vivek Lall told The Economic Times. The MQ9B-AEW marks the first attempt to integrate airborne early warning systems onto a UAV rather than a larger radar-equipped aircraft, enabling deeper, more persistent surveillance of air threats in enemy skies - an need also felt during Op Sindoor. For a "winning approach" in today's battlefield, Lall said India must invest not only in large strategic drones but also in a "layered ecosystem" spanning communications, indigenous payloads and a training pipeline that produces "operators and analysts as fast as platforms."

As the maker of the SeaGuardian and SkyGuardian MQ9B - a high-altitude, long-endurance UAV - Lall said GA views India as a long-term strategic hub. "The opportunity in India is not just to build platforms. It is to build an ecosystem - components, subassemblies, payload integration, software, training and long-term sustainment. If those fundamentals are in place, India will be more than a customer; it will be a strategic hub," he said, pointing to GA's partnership with L&T to manufacture Medium Altitude Long Endurance UAVs in India.

On how Sea/SkyGuardian class drones would have made a difference in Op Sindoor, Lall said such operations underscore the value of "persistent, high-quality intelligence and fast targeting," particularly when the requirement is "precision, restraint and clear battle damage assessment." The Sea/SkyGuardian platform, he added, is designed to "separate noise from signal.".



"That matters when the political and operational requirement is to be decisive without being reckless. They enable a cleaner chain - find, fix, track and, when authorised, engage - while maintaining a verified operational picture for commanders." The lesson from Op Sindoor, Lall said, is that modern conflict "rewards speed, integration and clarity of command". UAVs, sensors, electronic warfare, air defence and precision fires must be fused into a single operational picture that commanders can act on swiftly across services, he added.

"When integration is strong, you get decisive effects with better control over escalation and collateral risk. When it is weak, decisions slow down and effort gets duplicated." Can UAVs swing battle outcomes? Lall said they can - but not in isolation. "What they really do is compress time. They shorten the sense-decide-act loop, expose movements that were once hidden, and make it harder for any force to mass, manoeuvre or resupply without being detected and struck."

At the tactical level, he said, small drones and loitering munitions can dominate trenches, armour and artillery through persistent surveillance and rapid targeting. At the operational level, long-endurance UAVs enable wide-area coverage, including maritime domains, and provide deep-strike support at a "fraction of the cost" of manned platforms. "That said, these aircraft do not replace combined arms. If an adversary fields competent electronic warfare, air defences, deception and disciplined emissions control, drones become more vulnerable. The side that prevails is typically the one that integrates drones into a broader kill chain - intelligence, targeting, fires and battle damage assessment - while also investing in robust counter-drone and electronic protection."

According to Lall, India needs UAVs in scale that can operate across the Himalayas, deserts, dense urban terrain and expansive maritime approaches. "The right mix is not a single platform but layers: small, expendable systems near the front; medium platforms for brigade and division-level ISR; long-endurance systems that persist over land and sea; and a counter-drone architecture to protect bases, critical infrastructure and manoeuvre forces." Lall cautioned that while China's closest equivalents to the Sky/SeaGuardian are medium-altitude, long-endurance strike and ISR platforms such as the Wing Loong family and the CH series, the larger challenge lies in Beijing's ecosystem play. "The key point is that competition is not just a platform comparison. China is building breadth - multiple UAV types produced at scale, integrated with electronic warfare, data networks and an industrial base designed to iterate rapidly. That ecosystem is what makes them a serious competitor, even if individual subsystems differ in maturity."

https://economictimes.indiatimes.com/news/defence/general-atomics-open-to-offering-mq9b-uavs-with-airborne-early-warning-says-ceo-vivek-lall/articleshow/128687302.cms?from=mdr

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Not just Rafale jets, make its weapons in India too: Rajnath

Source: The Economic Times, Dt. 21 Feb 2026

India has conveyed to France that it should also include indigenous content in Rafale weapons package besides making the fighter jets in India as part of a deal to procure 114 of the combat aircraft. Sources said that in a meeting with his French counterpart this week, defence minister Rajnath Singh asked for a larger Make in India component for the Rafale deal. This would include the significant weapons package that would be signed consisting of Meteor, SCALP and Mica missiles, besides other armaments.

India has already cleared a ₹3,200 crore deal for additional SCALP air to ground missiles that were used with precise effect during Operation Sindoor. Sources said the Indian side is keen that the weapons be produced in India, given the large-scale requirements of the fleet over the next three decades.

While the Rafale jets to be produced in India will be enabled to integrate indigenous weapons, they will also have a significant number of French-origin missiles, which are currently being fully imported. India has been looking to produce cutting edge armament locally, with a joint venture agreement signed earlier this month between Safran and BEL to produce the highly agile modular munition extended range (HAMMER) smart precision guided air-to-ground weapon in India.

Sources said a similar model would be preferred for other missiles and weapons that would go on the fleet of Rafale fighter jets in service with the Indian Air Force and Navy. This could bring cutting edge manufacturing technology to Indian companies, which are at present mostly producing DRDO developed ammunition and missiles.

It would also enable integrating Indian companies in the global supply chains of complex armament. There is a growing global requirement for long-range missiles and weapons, including in Europe where nations have upped defence spending. India is pitching itself as a reliable partner to the EU, to use European expertise in defence research and development, to strengthen the Indian defence industrial base and diversify supply chains.

https://economictimes.indiatimes.com/news/defence/not-just-rafale-jets-make-its-weapons-in-india-too-rajnath/articleshow/128620559.cms?from=mdr

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Army showcases several AI-driven applications

Source: The Indian Express, Dt. 21 Feb 2026

New Delhi: From a climatology and disaster prediction system to a device that detects driver's fatigue to avert accidents, the India Army has showcased a slew of artificial intelligence-based applications at the AI Impact Summit here, with Defence Minister Rajnath Singh visiting the Army pavilion on Friday.

The Indian Navy has also put up a pavilion as part of the summit expo.

"Delighted to visit the AI Impact Summit at Bharat Mandapam today. India is rapidly emerging as a global leader in Artificial Intelligence and advanced technologies. The Summit showcases the immense talent of our innovators, researchers, startups, armed forces and industry leaders. India's AI vision MANAV, articulated by PM Shri @narendramodi at #IndiaAIImpactSummit2026, sets humanity's direction towards a secure and future-ready world," Singh posted on X. PTI

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एम्ब्रेयर के सीईओ ने कहा- भारत में बनाएंगे केसी-390 विमान

Source: Dainik Jagran, Dt. 23 Feb 2026

- जताई प्रतिबद्धता - भारत को केसी-390 विमान का वैश्विक उत्पादन केंद्र बनाएंगे
- भारत में केसी-390 आपरेटरों के लिए एमआरओ केंद्र स्थापित करने पर विचार कर रही कंपनी

नई दिल्ली, प्रेट्र : ब्राजील की एयरोस्पेस कंपनी एम्ब्रेयर भारत में केसी-390 मिलेनियम विमान बनाने के लिए तैयार है। कंपनी ने संकेत दिया है कि अगर उसे भारतीय वायुसेना से 80 परिवहन विमानों का अनुबंध मिलता है तो वह अपने केसी-390 मिलेनियम विमानों को भारत में बनाएगी। एम्ब्रेयर के प्रेसिडेंट और मुख्य कार्यपालक अधिकारी (सीईओ) ने फ्रांसिस्को गोम्स नेटो ने विशेष साक्षात्कार में कहा कि केसी-390 मिलेनियम भारत के लिए सर्वश्रेष्ठ विकल्प है।

एम्ब्रेयर के सीईओ ने कहा, अगर भारत से अनुबंध एम्ब्रेयर को मिलता है, तो कंपनी भारत को विमान विनिर्माण का मुख्य केंद्र बनाएगी ताकि एशिया-प्रशांत क्षेत्र की जरूरतों को पूरा किया जा सके। कंपनी भारत में केसी-390 आपरेटरों के लिए विशेष क्षेत्रीय एमआरओ (रखरखाव, मरम्मत व ओवरहाल) केंद्र स्थापित करने पर विचार कर रही है।

केसी-390 नई पीढ़ी का परिवहन और हवाई ईंधन भरने वाला बहुउद्देश्यीय विमान है। जेट इंजन से संचालित सह विमान 26 टन तक भार उठा सकता है।

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Tejas Mark 1A deliveries likely to start from April

Source: The Tribune, Dt. 22 Feb 2026

Deliveries of the much-awaited indigenous jet, Tejas Mark 1A, are expected to start early in the next fiscal starting April 1. The development comes after the Indian Air Force (IAF) laid down a list of 'essentials' before accepting the plane. However, the IAF has agreed to allow some exemptions from contractual obligations to plane maker Hindustan Aeronautics Limited.

The terms were agreed upon in conjunction with the Ministry of Defence, which is the majority stake holder in the HAL, sources said. The exemptions would mean that the promised equipment would be integrated as the production of the jet progresses. This further means that the IAF has agreed to incorporate various systems after accepting the plane. The integration of these systems would take another year.

Sources said the Air Force was ready to accept the plane once the final testing of missile firing and its certification was done. Separately, full integration of Israeli-origin radar with the indigenous Electronic Warfare systems, and the weapons package also needs to be completed. The IAF has listed these tasks as 'essential' before the jet is accepted. At a meeting with the Ministry of Defence and the IAF, the HAL has agreed to complete these tasks by April. The IAF will then carry out its own 'acceptance trials' that could take a few weeks.

Sources confirmed to The Tribune that the plane maker had carried out the test of air launched missiles and other tests. The Tejas Mark 1A made its maiden flight in October last year. It is an upgraded version of the Tejas, which is already in the IAF fleet. The IAF has placed an order of

making 180 Tejas Mark 1A. The deliveries were to start in March 2024, but has been delayed due to multiple reasons, including delay in the supply of engines from the US plane maker, General Electric.

Earlier this month, the HAL, in a statement, had said that it was ready with five 'fully ready' Tejas Mark 1A fighter jets and another nine jets were ready at the factory, awaiting engines from the General Electric (GE), the HAL had said. The HAL had said "it is confirmed that five aircraft are fully ready for delivery, incorporating major contracted capabilities in accordance with the agreed specifications"

All design and development issues identified are being addressed in an expedited manner. The HAL is in active discussions with the Indian Air Force to deliver the aircraft at the earliest, the company had said, adding "it will meet the guidance (timeline) projected for the current financial year". Sources said a delay in supplies of F404 engines has set back the delivery schedule of the Tejas Mark 1A jet. HAL is producing 180 of these planes for the Air Force. Deliveries of the plane were to start in March 2024, and the engines should have come before that date.

A delay in supplies of contracted equipment of the GE F404 engines needed for the under production Tejas Mark 1A fighter jet has become irksome for India. In July last year, Defence Minister Rajnath Singh asked his US counterpart Pete Hegseth to fast-track the delivery. New Delhi is commercially committed to US-origin supplies of engines needed for fighter jets. Since the US-India relations soured last year, supplies of engines for Tejas Mark 1A fighter jets have been delayed.

https://www.tribuneindia.com/news/india/tejas-mark-1a-deliveries-likely-to-start-from-april/

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Sukhoi-57 India's first fifth-gen jet 'choice' to counter Dragon

Source: The Tribune, Dt. 23 Feb 2026

After clearing the Rafale jet deal with France, India is now set to formalise the procurement of a fifth-generation stealth fighter jet, with the Sukhoi-57 from Russia emerging as the first choice. The jet had made a flying demonstration at Aero India in Bengaluru in February last year. The Ministry of Defence and the IAF discussed the immediate need for having a fifth-generation jet due to China's growing fleet, sources said. China has operational fifth-generation jets — the J-20 and the J-35. It has promised to give these to Pakistan. It was the first "sop" Beijing announced for Islamabad after the India-Pakistan conflict in May last year. The Russian Sukhoi-57 is the first choice as a stopgap arrangement till India's own fifth-generation jet — the advanced medium combat aircraft (AMCA) — is ready in 10 years from now.

The US option of a fifth-generation jet — the F-35 — is not being considered as India fears US restrictions on operating such a plane. Among the restrictions could include non-integration of Indian weapons on board. The existing IAF fleet of Sukhoi-30MKI jets have mated even the BrahMos and was used in Operation Sindoor. Without the integration, India will be forced to buy costly arsenal from western nations.

The restrictions US has imposed on the Pakistan Air Force for the F-16 jests was cited by the sources, saying each sortie is monitored by the US. Engineers from the US are based in Pakistan airbases even for routine maintenance. Ironically, in February last year, US President Donald Trump, at a joint press conference with Prime Minister Narendra Modi in Washington DC, had said,

“We will be increasing military sales to India by many billions of dollars. We are also paving the way to ultimately provide India with F-35 stealth fighters”.

Another option weighing in favour of the Russian offer is the commonality of maintenance the Sukhoi-57 will have with the Sukhoi-30MKI. The Russians have made an offer of the Sukhoi-57. A team came and saw the facilities available at the Nashik unit of Hindustan Aeronautics Limited (HAL). “We are yet to start negotiations with the Russians; that will happen once IAF teams take a deep dive into what all is on offer,” the sources said. In 2007, India signed an agreement with Russia for the joint development of a fifth-generation fighter aircraft in collaboration with HAL. Although both nations initially committed $6 billion for the project, India withdrew in 2018, citing concerns over cost, work share and perceived capability gaps.

A fifth-generation aircraft is defined by its capabilities that allows the pilot to maintain decision superiority over an adversary. Onboard sensors and stealth technology make it tough for enemy radars to track a fifth-generation plane that is backed by millions of software codes. The classification of a generational shift occurs when a technological innovation cannot be incorporated into an existing aircraft through upgrades and retrospective fit-outs.

The first-generation subsonic jet fighters are from mid-1940s to mid-1950s; the second-generation jets from mid-1950s to early 1960s; third-generation jets from early 1960s to 1970; fourth-generation jet fighters from 1970 to late 1980s; after which four-and-a-half-generation jet fighters had followed. The fifth-generation arrived in 2005 when the US unveiled the F-22 Raptor.

https://www.tribuneindia.com/news/top-headlines/sukhoi-57-indias-first-fifth-gen-jet-choice-to-counter-dragon/

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Cheap Drones, Costly Wars

-by Wing Commander Ankit Abbott, VSM (also commanded a Surface-to-Air Guided Weapon Squadron)

Source: The Pioneer, Dt. 23 Feb 2026

Drones have captured global military imagination, dominating conflicts from Eastern Europe to the Middle East and creating the impression that mass and saturation now determine victory. Yet how wars actually end tells a different story. Some conflicts have de-escalated swiftly after decisive air campaigns, while others have dragged on despite extensive drone use. For India, this distinction is critical, shaping how future sub-continental conflicts may be fought and how swiftly they can be decisively concluded. At the heart of this debate is the distinction between Tier-1 and Tier-2 airpower.

Tier-1 airpower represents the pinnacle of military aviation: modern fighters, fused sensors, AI-enabled planning, and - crucially - doctrine, training, integration, and intent. It is designed to conduct air campaigns that target an adversary’s decision making capacity, with precision, intelligence fusion, command and control, and escalation management as core attributes. Tier-2 airpower, by contrast, relies on mass - especially drones - for steady attrition. Despite its technological sheen, it mirrors World War-1 trench warfare in the air, producing prolonged conflicts, marked by rising costs rather than decisive outcomes.

Recent experience indicates that Tier-1 airpower is far more effective at compressing conflict timelines. Operation Sindoor illustrates this clearly. The campaign relied on precision air strikes, tight command and control, and careful escalation management. IAF fighters, employing precision stand-off weapons and electronic warfare, penetrated Chinese-origin Pakistani air defence systems to conduct deep strikes against terror camps and PAF bases. Instead of seeking marginal effects through low-impact drone attrition, Indian planners delivered a swift and sharp demonstration of capability that constrained the adversary's choices. Pakistan's drone and missile responses were neutralised by India's layered and integrated air defence network. Within four days, the conflict ended, with the regional military balance decisively signalled through airpower.

This logic echoes the Tier-1 airpower masterstroke of Israel's Operation Rising Lion against Iran. In a volatile region prone to escalation, Israel prioritised rapid air superiority through pre-emptive SEAD (Suppression of Enemy Air Defences), using AI-sifted intelligence for hyper-precise strikes. Follow-on attacks targeted key nuclear facilities at Natanz and Fordow, while Iran's retaliatory drones and missiles were intercepted with a very high success rate. The outcome was a short and intense confrontation that conveyed strategic resolve without sliding into prolonged war. For India, facing nuclear-armed adversaries, the lesson is clear: speed, clarity, and control are strategic necessities, not optional advantages.

The contrast with the Russia-Ukraine war is stark. Despite ubiquitous drone use for reconnaissance, strikes, and harassment, neither side has achieved decisive advantage. Instead, the conflict has degenerated into a grinding contest of endurance, exposing Tier-2 airpower's fatal flaws as incremental gains are purchased at immense human and economic cost.

Global think tanks quantify Tier-1's edge with hard data. A 2025 CSIS study comparing Israel-Iran and Russia-Ukraine shows that Tier-1 forces like Israel achieved air dominance in four days with about 200 sorties, at an estimated cost of roughly $2 billion. By contrast, Russia has spent around $500 million per day for years with limited gains. SIPRI data further shows that prolonged wars drive exponentially rising military expenditure across entire regions, not just the belligerents.

The verdict is clear. Tier-1 airpower - precision and doctrine over drone deluges - doesn't merely prevail; it ends conflicts faster and at lower overall cost. Attrition-based, drone-heavy warfare may appear affordable per unit, but it becomes ruinously expensive over time. Prolonged conflicts drain national attention, slow economic growth, and heighten risks of horizontal or vertical escalation. World Bank and SIPRI studies show that long wars impose costs far beyond the battlefield - lost GDP, deferred development and reconstruction burdens. By contrast, short, decisive campaigns, even with high upfront investments, are typically cheaper across their lifecycle.

India's strategic calculus is clear. As a rising power seeking sustained growth and regional stability, it must not fall into the trap of a war of endurance. Its geography and threat environment already raise the prospect of a two-front contingency, where time matters as much as terrain. Tier-1 airpower addresses this challenge by shaping outcomes rapidly, limiting conflict duration, and preserving strategic flexibility. This does not render drones irrelevant.

They remain valuable, versatile and complementary enablers in modern warfare. However, drones alone do not deliver a strategic advantage; they lock adversaries in cycles of retaliation rather than compel resolution. Recent conflicts show that technology without doctrine prolongs war. India's evolving airpower posture, emphasising precision strike, integrated air defence, intelligence fusion and integrated planning reflects a clear understanding of this reality. The real choice is not between manned aircraft and drones, but between decisive outcomes and protracted conflict.

In an era captivated by FPV drone footage, India's experience offers a more enduring lesson: wars end faster when airpower targets an adversary's ability to decide, not merely its capacity to endure. That is the true advantage of Tier-1 airpower and why India's bet on it matters.

https://dailypioneer.com/news/cheap-drones-costly-wars

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Indian Army Hosts National Seminar On "Enhancing Military Decision-Making Through Wargaming And Simulation" And Releases Indigenous Decision-Support Applications

Source: Press Information Bureau, Dt. 20 Feb 2026

A Wargaming Seminar themed "Enhancing Military Decision-Making through Wargaming and Simulation – Bridging Knowledge and Industry Gaps" was conducted by the Indian Army today at Manekshaw Centre, New Delhi. The seminar, organised by the Wargaming Development Centre (WARDEC), provided a national platform for strategic dialogue, bringing together participants from across India's wargaming ecosystem, including senior military leaders, academicians, strategic thinkers and technology industry experts. The event underscored the growing importance of wargaming as a critical tool for operational planning, leadership development and doctrinal innovation in contemporary and future multi-domain battlespaces.

The seminar was inaugurated by Lieutenant General Devendra Sharma, General Officer Commanding-in-Chief, Army Training Command. In his keynote address, he emphasised that wargaming is not merely a procedural exercise but a strategic instrument to sharpen judgement, validate assumptions and cultivate adaptive thinking. He highlighted the imperative of embedding simulation-driven analysis within institutional planning processes to enhance operational preparedness, decision superiority and the Indian Army's ability to respond effectively to dynamic operational challenges. The address also reflected the growing focus on Atmanirbharta in defence, highlighting the Indian Army's commitment to designing, developing and deploying advanced capabilities indigenously.

The seminar featured in-depth discussions across operational, academic and industrial perspectives. From the military perspective, the seminar focused on leveraging multi-domain simulations, institutionalising wargaming as a core professional competency and preparing commanders for complex operational environments characterised by speed, ambiguity and technological disruption. From the academic perspective, the seminar highlighted the role of universities and research institutions in developing human capital, conducting interdisciplinary research in artificial intelligence, data analytics, behavioural sciences and systems engineering; and fostering practitioner–academic collaborations to advance wargaming methodologies.

From the industry perspective, the seminar emphasised military-civil partnerships, co-development frameworks and the integration of emerging technologies such as Artificial Intelligence, Machine Learning, Big Data analytics, Virtual Reality and Augmented Reality into operationally relevant simulation environments. An accompanying exhibition showcased advanced simulation platforms and innovative technological solutions, reinforcing the collaborative ethos and shared vision of the Indian wargaming ecosystem. During the seminar three indigenously developed software applications by WARDEC were also released. These include Auto Evaluation Map Marking Tool; Combat Decision Resolution – Version 9; and Automated Intelligence Preparation of the Battlefield. These applications mark a significant milestone in the Indian Army's journey towards technological self-reliance, offering structured decision-support frameworks for commanders at all levels.

The closing session was addressed by Lieutenant General Zubin A Minwalla, Deputy Chief of Integrated Defence Staff, Doctrine, Organisation and Training, who underscored the importance of a self-reliant, future-ready wargaming ecosystem in supporting doctrinal innovation, analytical evaluation and leadership development. He emphasised that such an ecosystem is crucial for nurturing anticipatory planning capabilities, preparing commanders for multi-domain operational challenges and ensuring that India remains at the forefront of military thought and technological innovation.

The seminar reaffirmed the Indian Army's commitment to complement material modernisation with intellectual preparedness. By convening the Armed Forces, academia and industry on a unified platform, it strengthened the foundations of a resilient, self-reliant and future-ready wargaming ecosystem, advancing India's operational capability and safeguarding national security. The event highlighted the strategic significance of simulation-enabled training, analytical evaluation and

decision-support tools in preparing commanders to operate effectively in increasingly complex operational environments and demonstrated India's determination to achieve technological autonomy while fostering collaborative innovation.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2230790&reg=3&lang=1

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DefSat to bring together strategic experts, policymakers

Source: The Pioneer, Dt. 22 Feb 2026

Senior military leaders, policymakers, technology partners and entrepreneurs will come together to discuss the use of space technology in defence at the fourth edition of DefSat next week in the national Capital, officials said on Saturday. The theme of the conference, which will take place from February 24 to 26 at the Manekshaw Centre in New Delhi, is "Space at the Core of National Security."

In a statement, Subba Rao Pavuluri, president of the Satcom Industry Association India (SIA-India), said, "Globally, more than 50 countries now operate military or dual-use satellites, and space has become central to deterrence and operational readiness." "DefSat's theme placing space at the core of national security reflects a shift from viewing space as an enabler to recognising it as a strategic security domain that requires doctrine, resilience and coordinated planning," Pavuluri added.

The DefSat-2026 conference will convene over 500 participants from around 20 countries, and more than 20 speakers and representatives from nearly 60 organisations. It will feature a broad agenda spanning operational doctrine, industrial collaboration, technology resilience, and geopolitical partnerships. The conference will take place at a time when India has announced its highest-ever defence Budget of Rs 7.85 lakh crore for the financial year 2026-2027.

In a statement, Anil Prakash, Director General of SIA-India, said, "With India allocating a record Rs 7.85 lakh crore to defence, over Rs 2.19 lakh crore in capital modernisation, and nearly Rs 1.39 lakh crore reserved for domestic industry, the signal is clear - India is investing in future-ready security." "Space sits at the centre of this transformation. DEFSAT 2026 is where policy, military thinking and industry readiness come together to ensure space is not just used, but secured and integrated into national defence doctrine," he added.

https://dailypioneer.com/news/defsat-to-bring-together-strategic-experts-policymakers

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IOR joint mechanism needs consensus: Navy Chief

Source: The Pioneer, Dt. 22 Feb 2026

Chief of Naval Staff Admiral Dinesh Tripathi on Saturday said that any proposed joint maritime mechanism in the Indian Ocean Region (IOR) would be based on consensus among participating nations, assuring India's support for partner countries in capacity-building efforts. Addressing a press conference on the sidelines of the Goa Maritime Conclave (GMC) 2026, Admiral Tripathi said the first session of the conclave involved discussions regarding enhanced cooperation among IOR nations, including the possibility of a joint task force-type arrangement.

“The GMC is based on consensus. There has to be a consensus among all nations. All of us have different capabilities, so what everyone brings to the table has to be taken into consideration,” he said. The Navy chief noted that the idea of closer operational cooperation was well accepted and said modalities of a joint task force would have to be worked out collectively. He highlighted a previous initiative, referring to Indian Ocean Ship (IOS) SAGAR (Security and Growth for All in the Region), under which personnel from 10 IOR countries embarked on an Indian naval platform last year and sailed together for 41 days, making port calls across the region. “The experience and feedback we got was very positive, including from the maritime and political leadership of various countries. Based on that, we have decided to have IOS SAGAR 2.0 this year. We are deciding the date,” he said.

Such initiatives, where officers and sailors from IOR nations sail and work together, help build a common understanding of the maritime environment, he said. “When they sail together and work together, the maritime environment that they see - whether electronically or through their eyes - is common. Therefore, they have a common understanding, which will obviously see greater acceptance of each other’s views and enhance interoperability between participating nations,” he added. On emerging challenges in the region, Admiral Tripathi said that the vast expanse of the Indian Ocean - the third-largest ocean in the world - makes persistent surveillance a major challenge. He stressed the need for real-time exchange of information, particularly to tackle issues such as narcotics trade, human trafficking and maritime terrorism.

“In many cases, especially issues like narcotics trade, human trafficking and maritime terrorism, there has to be a real-time exchange of information. Not that it has not happened in the past — there are success stories where some countries have worked together and ensured that certain illegal activities do not succeed,” he said. The Navy chief noted that the key challenge lies in capacity constraints. “Being a responsible nation, we take pride in supporting any activities of partner nations as far as capacity building is concerned, based on their request and discussions that happen at various levels,” he added.

https://dailypioneer.com/news/ior-joint-mechanism-needs-consensus-navy-chief

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India assumes IONS Chairmanship

Source: The Pioneer, Dt. 21 Feb 2026

India has assumed the Chairmanship of the IONS from the Royal Thai Navy after a gap of 16 years, a top official said on Friday. The Indian Ocean Naval Symposium (IONS) is a voluntary initiative aimed at increasing maritime cooperation among navies of littoral states of the Indian Ocean Region.

India assumed the role during the 9th Conclave of Chiefs held here, Vice Admiral Tarun Sobti, Deputy Chief of Naval Staff, said. Chief of the Naval Staff Admiral Dinesh K Tripathi took over as Chair of IONS at the conclave, which brought together Chiefs of Navies and Heads of Maritime Security Agencies from 33 countries, including members, observers and other Indian Ocean littoral nations.

https://dailypioneer.com/news/pioneer-in-short-pioneer-in-short-2026-02-21

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Rajnath calls for stronger global naval cooperation at MILAN

Source: The Pioneer, Dt. 21 Feb 2026

Defence Minister Rajnath Singh has urged the international community to work collectively to address the increasingly complex and interconnected challenges in the maritime domain, guided by mutual respect and a spirit of cooperation. Addressing Navy Chiefs and Heads of Delegations from 74 countries during the inaugural ceremony of Exercise MILAN on Thursday, he asserted that traditional threats now coexist with emerging challenges such as piracy, maritime terrorism, illegal fishing, trafficking, cyber vulnerabilities, and disruptions to critical supply chains.

He added that climate change is intensifying natural disasters, making humanitarian assistance and disaster relief operations more frequent and demanding. “The role of navies in international peacemaking has only increased over time. There has been an exponential economic growth during the last few decades, leading to a massive increase in international trade and transport. There has also been a rise in contests for ownership of straits and channels, sometimes causing threats of flare-up,” Rajnath Singh said.

He noted that increasing international attention to underwater resources, particularly rare-earth minerals, is adding a new dimension to the tension. Singh also stressed the need to safeguard waters from the terrorist activities that are spreading tentacles across countries and regions. Emphasising that no single navy, however capable, can address the emerging challenges alone, he underscored the importance of enhanced cooperation among the Navies to ensure a safer and more secure future. The defence minister highlighted the robust legal framework provided by the UN Convention on the Law of the Seas (UNCLOS) to address matters related to international waters that can be further strengthened through a comprehensive global naval architecture.

According to him, UNCLOS provides a comprehensive and time-tested mechanism for dispute redressal and peaceful co-existence among nations, and the comprehensive global naval architecture would facilitate information sharing, protect links of communications and curb criminal activities, including terrorism on high seas, along with the usual role of protecting the national boundaries on a global scale.

Pointing out that the established international order is witnessing an upheaval, Rajnath Singh said platforms like MILAN bring together professional expertise, build mutual trust, enhance interoperability, and enable coordinated responses to common challenges. “When our ships sail together, when our sailors train together, and when our commanders deliberate together, we build a shared understanding that transcends geography and politics and provides an opportune moment to deliberate on this idea of cooperation,” he said.

Highlighting India’s long-standing commitment to maritime cooperation, the Defence Minister said the country’s approach, shaped by the vision of Security and Growth for All in the Region (SAGAR), has evolved into Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR). “This evolution from SAGAR, i.e., seas, to MAHASAGAR, i.e., oceans, reflects India’s deepening commitment to engaging with partners in the region and beyond,” he said. Rajnath Singh added that the International Fleet Review 2026 was a clear affirmation of goodwill, professionalism and mutual respect among the world’s navies.

https://dailypioneer.com/news/rajnath-calls-for-stronger-global-naval-cooperation-at-milan

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Why France is the new Russia

Source: The Tribune, Dt. 21 Feb 2026

AJAY BANERJEE

A SERIES of developments in the military aviation sector have positioned India-France ties as matching New Delhi's historic cooperation with Moscow. Russia's pole position as a supplier of military equipment to India remains unchallenged, but France is now the lead partner in military aviation. Its companies are collaborating with Indian partners to produce fighter jets, jet engines, air-launched precision missiles and in making latest avionics.

Moscow's military cooperation extends to miniaturisation of nuclear reactors for submarines, and co-production of T-90 tanks and BrahMos missiles. The S-400 air defence system, which wreaked havoc during Operation Sindoor, is Russian.

Faced with multiple threats of US sanctions over ties with Russia, somewhere down the line, New Delhi opted for a strategic tie-up with France. With the US, India has a buyer-seller relationship for military technology, and aspirations of being a 'partner' in technology remain unattended.

Air Marshal Anil Chopra (retd), former Director General of the Centre for Air Power and Strategic Studies (CAPSS), an IAF-backed think tank, gives reasons for India opting for France: "One, they will not arm-twist us for some geo-political reasons. Two, in all past operations, French-origin planes such as the Mystere, Mirage 2000 and Rafale have proved their mettle."

THE SEAMLESS SHIFT

Historic relations and latest tie-ups position France as India's "all-weather friend", offering high-tech weaponry and localised production.

France has gained in the past 15 years as the Russian inventories slowed down. The last major Indian order from Russia was of additional Mi-17V5 helicopters in 2013. All other aviation fleets of Russian parentage of the Indian Air Force are older, including the Sukhoi-30MKI jets, the MiG-29 jets, transport planes IL-76 and AN-32 and helicopters Mi-17 and Mi-25/Mi-35.

In the past two decades, New Delhi has also purchased cutting-edge military equipment — largely planes and copters — worth almost $20 billion

> Russia's pole position as a supplier of military equipment to India remains intact, but France is now the lead partner in aviation

from the US, but with no transfer of technology. On the other hand, France, besides offering local production, 'mirrored' what Russia did as India's partner. In 1998, when most western nations sanctioned India following its nuclear tests, France was one of the few that refused to condemn New Delhi. It has also supported India on sensitive issues at the United Nations Security Council, including counter-terrorism and Kashmir.

Air Vice Marshal Manmohan Bahadur (retd), a former Additional DG of the CAPSS, argues: "French imports have a similarity, like the Russians, that they came with no strings attached. Both have been reliable partners."

"France is a time-tested friend and makes the entire plane and its armaments," avers Air Marshal Chopra. However, a key issue will be technology transfer and how India benefits. Hindustan Aeronautics Limited (HAL) has been licence-producing Russian-origin planes and engines, but learnt nothing about metallurgy from those projects. "It is naive to expect a full technology transfer from France or from anyone," points out AVM Bahadur.

India-US technology cooperation still has a glimmer of hope in the expected joint venture to produce General Electric's F-414 aero-engine in India. The Tejas Mark-2 fighter jet was designed around the specifications of the GE F-414 engine.

THE FRENCH EDGE

India's decision to get 36 Rafale jets for the IAF from plane maker Dassault in 2015 marked a turning point in military aviation ties. Later, the Navy's demand for 26 jets of the 'Marine' version was okayed. Last week, the Defence Acquisition Council, the apex decision-making body of the Ministry of Defence, green-lighted the procurement of another 114 Rafale jets — a collective order of 176 jets. Effectively, French jets would emerge as the lead strike formations as India has not ordered any new Russian jets in the past 20 years. It means the existing fleets of Sukhoi-30MKI and MiG 29 variants would start retiring.

French President Emmanuel Macron, who was in New Delhi for the AI Summit, assured that 'Make in India' would be key to the Rafale project.

ENGINES, MISSILES, AVIONICS, COPTERS

French military aviation supplies to India date back to the 1950s when the IAF got the Ouragan and Mystere, and the Navy flew the Alize aircraft. French helicopter Alouette III was first licensed-produced by HAL in the 1960s. The Mirage 2000 fighter jets came in the 1980s, while a Safran-HAL joint venture produced the first 'Shakti' engine for the indigenous Dhruv helicopter in 2007.

This week, a joint venture was signed between public sector unit Bharat Electronics Limited and Safran to produce the 'hammer' missiles, which are already mated to the existing fleet of Rafale jets and were used during Operation Sindoor. The missile can also be mated to the IAF's Mirage 2000 fleet and the Tejas jets — some 180 are on order.

India's first helicopter 'final assembly line' in the private sector was also inaugurated this week. European giant Airbus and India's Tata Advanced Systems Limited will build the Airbus H-125 helicopters. France is one of the four partners in Airbus.

In 2022, Safran and HAL announced a joint venture to develop engines for the next generation, 13-tonne capacity Indian Multi Role Helicopter. The French company is also partnering with the Gas Turbine Research Establishment to make a new 120 kilo newton thrust engine for India's 5th-generation Advanced Medium Combat Aircraft (AMCA).

Earlier this week, French avionics maker Thales opened its laboratory for research and technology at its Engineering Competence Centre in Bengaluru. Thales has an annual Euro 4 billion spend on R&D. Ankur Kanaglekar, Vice-President (India), Thales, says, "We will continue to expand engineering and R&D footprint... and deepen collaborations."

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Science & Technology

एआई इम्पैक्ट समिट में स्वदेशी रोबोट का दिखा जलवा

Source: Dainik Jagran, Dt. 22 Feb 2026

नई दिल्ली, प्रेट्र : राष्ट्रीय राजधानी में एआइ इम्पैक्ट समिट में भारत के स्वदेशी रोबोटों का जलवा दिखा। इन रोबोटों में कानपुर के स्टार्टअप एक्स टेरा रोबोटिक्स द्वारा निर्मित रोबोट कुत्ता स्वान एम2 शामिल है। एक्स टेरा रोबोटिक्स के सह-संस्थापक ने बताया कि इस रोबोट कुत्ते को विकसित करने के लिए छात्रों और शिक्षकों ने वर्षों तक शोध किया। एल्यूमीनियम मिश्र धातु से बने शरीर और पैरों वाले स्वान एम2, अपने लाइट डिटेक्शन एंड रेंजिंग (लिडार) उपकरण का इस्तेमाल करके अपने परिवेश का सटीक 3डी मैपिंग करता है। इसका उपयोग किसी खतरनाक क्षेत्र की निगरानी करने या बिजली संयंत्रों में थर्मल इमेजिंग के माध्यम से केंद्र का निरीक्षण करने के लिए किया जा सकता है। 3डी मैपिंग करके तथा दूरस्थ टीम को चित्र भेजकर जान बचाने में महत्वपूर्ण भूमिका निभा सकता है। निमेश खंडेलवाल, अविनाश भास्कर, अमृतांशु मनु, आदित्य राजावत और शक्ति एस गुप्ता द्वारा 2023 में स्थापित एक्स टेरा रोबोटिक्स, आइआइटी कानपुर परिसर में स्थित है।

कानपुर के स्टार्टअप एक्स टेरा रोबोटिक्स द्वारा निर्मित रोबोट स्वान एम2 ● प्रेट्र

- कानपुर के स्टार्टअप एक्स टेरा रोबोटिक्स ने बनाया है रोबोट कुत्ता स्वान एम2
- लिडार उपकरण का इस्तेमाल करके यह कर सकता है सटीक 3डी मैपिंग

छात्रों ने विकसित किया 3डी प्रिंटेड ह्यूमनाइड रोबोट

मध्यप्रदेश दीर्घा में राज्य का पहला 3डी प्रिंटेड ह्यूमनाइड रोबोट प्रदर्शित किया गया, जिसे कक्षा सातवीं और आठवीं के छात्रों ने स्टार्टअप यंगोवेटर के सहयोग से विकसित किया है। दो फीट के युग बाट का ढांचा प्लास्टिक का बना है। कृत्रिम आंखें लगी हैं। यंगोवेटर के तकनीकी संचालन प्रमुख कार्तिक पांडे ने कहा, यह पूरी तरह से स्वदेशी है। विभिन्न स्कूलों में बच्चों को उनकी तकनीक से संबंधित गतिविधियों में सहायता करने वाला यह स्टार्टअप इस बाट का विस्तार करने की योजना बना रहा है।

यूएनडब्ल्यूएफपी के रोबोट ने भी किया आकर्षित : संयुक्त राष्ट्र विश्व खाद्य कार्यक्रम (यूएनडब्ल्यूएफपी) के रोबोट ने भी ध्यान आकर्षित किया। भारत में विकसित, आठ फीट ऊंचे टावर के आकार के इस रोबोट को भारतीय खाद्य निगम और गोदामों के लिए पायलट परियोजना के रूप में विकसित किया गया है। यह तापमान व गैसों के रिसाव का पता लगा सकता है। यूएनडब्ल्यूएफपी के अमित कुमार ने कहा, अगर यह रोबोट गोदाम में हो, तो निरीक्षण के लिए अंदर जाने की जरूरत नहीं है।

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अल्जाइमर के इलाज में सक्षम 'आई-43' अणु की खोज

Source: Dainik Jagran, Dt. 23 Feb 2026

अनूप कुमार सिंह ● जागरण

नई दिल्ली: स्मृति लोप से संबंधित लाइलाज बीमारी अल्जाइमर के उपचार की दिशा में भारतीय वैज्ञानिकों ने बड़ी उपलब्धि पाई है। आइआइटी बीएचयू, एम्स नई दिल्ली और नेशनल इंस्टीट्यूट आफ इम्यूनोलाजी के चिकित्सकों व शोधकर्ताओं की संयुक्त टीम ने 'आइ-43' नामक एक नए सक्रिय अणु की खोज की है। विशेषज्ञों का दावा है कि 'आइ-43' जांच और उपचार दोनों काम कर सकता है। यह शोध प्रतिष्ठित अंतरराष्ट्रीय मेडिकल जर्नल नेचर कम्युनिकेशंस में प्रमुखता से प्रकाशित हुआ है। इस अणु की खोज के लिए पेटेंट भी दाखिल किया जा चुका है। आवश्यक औपचारिकता और अनुमति के बाद क्लीनिकल ट्रायल आरंभ हो जाएंगे।

- स्वदेशी खोज ने स्मृति लोप से संबंधित इस लाइलाज बीमारी के ठोस उपचार की जगाई उम्मीद
- एम्स नई दिल्ली, आइआइटी बीएचयू व नेशनल इंस्टीट्यूट आफ इम्यूनोलाजी के शोध को सफलता

प्रो. डा. सरोज कुमार ● एम्स

शोध में एम्स नई दिल्ली की टीम का नेतृत्व बायो फिजिक्स विभाग के सहायक प्रोफेसर डा. सरोज कुमार ने किया। उन्होंने कहा कि आसान शब्दों में समझें तो 'आइ-43' ऐसा तत्व है जो दिमाग तक पहुंच सकता है। दिमाग के चारों ओर एक सुरक्षा परत होती है, जिसे ब्लड ब्रेन बैरियर कहा जाता है। कई दवाएं इसे पार नहीं कर पातीं, लेकिन 'आइ 43' इस बाधा को पार कर सीधे दिमाग में असर करता है। अल्जाइमर में दिमाग में जमा होने वाला 'अमाइलाइड-बीटा प्लाक' नामक हानिकारक एंजाइम वहां 'एसिटाइलकोलिन' नामक रसायन को नष्ट कर देता है, याददाश्त कमजोर होने लगती है।

क्या होता है अल्जाइमर

सामान्य भाषा में अल्जाइमर को स्मृति लोप की बीमारी कहा जाता है।अल्जाइमर दरअसल डिमेंशिया (मस्तिष्क क्षीणता) का सामान्य प्रकार है। इसमें याददाश्त के साथ ही सोचने-समझने, निर्णय लेने और पहचानने व बोलने की क्षमता प्रभावित होती है।

आइ-43 इस एंजाइम की पहचान कर बीमारी का जल्दी पता लगाने में मदद करता है। इतना ही यह अणु उस हानिकारक एंजाइम को खत्म करने में भी सक्षम है, जो एसिटाइलकोलिन नामक जरूरी रसायन को नष्ट करता है। एसिटाइलकोलिन याददाश्त और सोचने-समझने की क्षमता के लिए जरूरी होता है। इसके नष्ट होने से अल्जाइमर पर आसानी से नियंत्रण पाया जा सकता है। पूरी तरह स्वदेशी अनुसंधान पर आधारित यह उपलब्धि परीक्षणों के बाद यह अल्जाइमर के प्रभावी इलाज की दिशा में बड़ा कदम साबित हो सकता है। आइआइटी बीएचयू की टीम का नेतृत्व प्रोफेसर ज्ञान पी. मोदी ने किया। नेशनल इंस्टीट्यूट आफ इम्यूनोलाजी से प्रो. सारिका गुप्ता इसमें शामिल रहीं।

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Sarvam and India's AI leap

Source: The Tribune, Dt. 21 Feb 2026

Launch of 2 home-grown large language models marks a strategic, practical shift

GAGANDEEP ARORA

INDIA'S artificial intelligence (AI) journey has taken a significant step forward with Sarvam AI unveiling two new home-grown large language models (LLMs) at the India AI Summit. The 30-billion-parameter and 105-billion-parameter models are designed to power everything from real-time conversations to complex reasoning tasks. For a country aiming to build a sovereign AI ecosystem, the development is both strategic and practical.

WHAT ARE LARGE LANGUAGE MODELS?

In simple terms, large language models are AI systems trained on massive amounts of text data so they can understand, generate and respond to human language. They power chatbots, virtual assistants, translation tools, coding helpers and more.

The "parameters" mentioned, 30 billion and 105 billion, refer to the number of internal connections the model uses to learn patterns. Generally, more parameters mean more capability, but also more computing cost and complexity.

SOVEREIGN AI PUSH

Sarvam AI was selected under the Centre's IndiaAI Mission in April 2025 to help build the country's first sovereign LLM. A sovereign model means AI that is developed, trained and deployed within the country, aligned to Indian languages, culture, governance needs and data security priorities.

This reduces dependence on foreign AI systems and ensures that sensitive data remains within national boundaries.

Sarvam AI was selected last year to build India's first sovereign LLM.

30B MODEL: REAL-TIME CONVERSATIONS

The 30-billion-parameter model is designed as a production-ready conversational engine. It is pre-trained on 16 trillion tokens (words and text units) and supports a 32,000-token context window, allowing it to handle long conversations and detailed queries.

What makes this model efficient is its mixture-of-experts (MoE) architecture. Instead of activating all 30 billion parameters for every response, it activates only about 1 billion at a time. This reduces computing cost and speeds up responses.

According to Sarvam co-founder Pratyush Kumar, while larger models are more capable, they are also harder to train and deploy.

WHERE WILL YOU SEE ITS BENEFITS?

- *Customer care chatbots in banking, telecom and e-commerce*
- *Government service portals answering public queries*
- *Healthcare helplines guiding patients*
- *Education platforms offering tutoring support*
- *Local language assistants for rural users*

The model supports Indian languages, which is critical in a diverse country where English is not the primary language for most citizens. It also performs competitively against global models of similar size on benchmarks such as HumanEval, MMLU and coding tests — indicating strong technical capability.

105B MODEL: FOR COMPLEX REASONING

Sarvam's second model, the 105-billion-parameter LLM, is aimed at advanced reasoning tasks. It activates around 9 billion parameters when generating responses. It also supports a much larger 1,28,000-token context window, enabling it to process very long documents. This model is built for maths problem solving, coding and software development, bug detection, research analysis.

REAL-WORLD IMPACT

The advanced reasoning ability opens doors across sectors:

Software and startups: Developers can generate code, debug errors and accelerate product building.

Legal access: AI can simplify legal research, draft documents and explain laws in regional languages.

Education: Step-by-step help in maths, science and coding.

Governance: Policy analysis and document review can become faster and more data-driven.

At the launch, Sarvam AI co-founder Pratyush Kumar said these models were on a par with most other open and closed frontier models of its class, and designed to do complex reasoning tasks very well. The 105-billion-parameter model could meet most benchmarks, and was also cheaper than Google's Gemini Flash and yet outperformed its many benchmarks, he claimed.

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पंजाब केसरी जनसत्ता
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The Economic Times
Press Information Bureau
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