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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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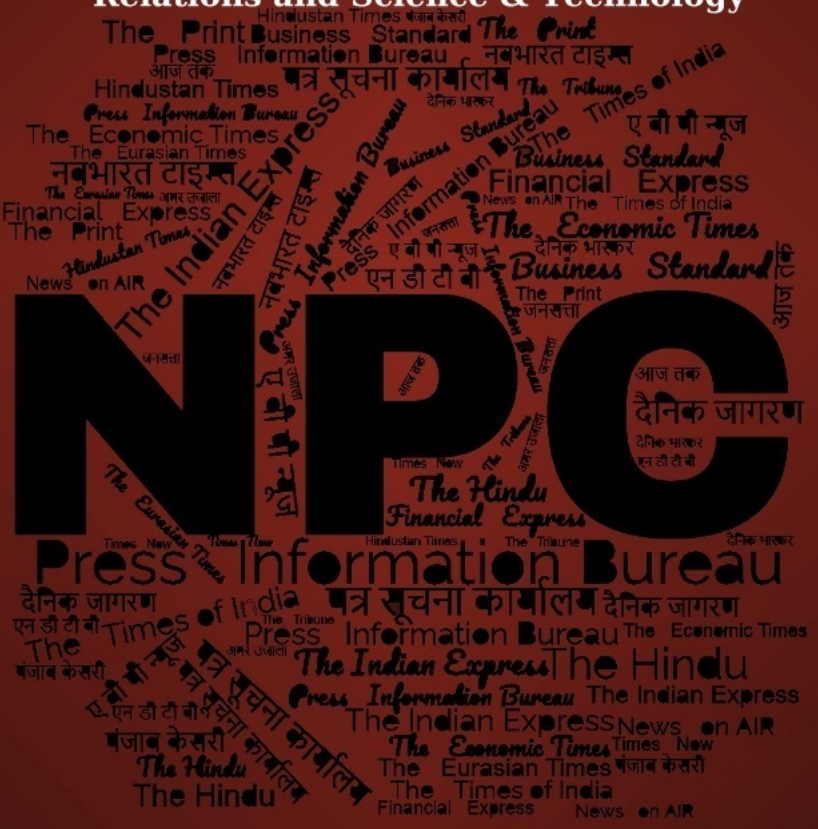


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# CONTENTS

# Defence News

## नौसेना को मिला एडवांस गाइडेड मिसाइल युद्धपोत 'हिमगिरि'

***Source: Dainik Jagran, Dt. 01 Aug 2025***

जागरण ब्यूरो, नई दिल्ली : नवनिर्मित एडवांस गाइडेड मिसाइल युद्धपोत 'हिमगिरि' समुद्र में भारतीय नौसेना की मारक क्षमता को नई ऊंचाइयों पर ले जाएगा। परियोजना 17ए परियोजना के तहत निर्मित यह युद्धपोत गुरुवार को नौसेना को सौंपा गया। इसे सरकारी क्षेत्र की रक्षा कंपनी गार्डन रीच शिपबिल्डर्स एंड इंजीनियर्स (जीआरएसई) लिमिटेड ने तैयार किया है। हिमगिरि 149 मीटर लंबा और 6,670 टन वजनी है। यह जीआरएसई द्वारा निर्मित सबसे बड़ा और सबसे उन्नत गाइडेड मिसाइल युद्धपोत है।

हिमगिरि नौसेना के लिए बनाए जा रहे तीन एडवांस गाइडेड मिसाइल युद्धपोतों में से पहला है। इसकी आपूर्ति से भारतीय नौसेना की उन्नत निर्देशित मिसाइल फ्रिगेट क्षमताओं में महत्वपूर्ण वृद्धि होगी। जीआरएसई ने एक आधिकारिक बयान में कहा कि कोलकाता में इस युद्धपोत को नौसेना की ओर से पूर्वी नौसेना कमान के चीफ स्टाफ आफिसर (तकनीकी) रियर एडमिरल रवनीश सेठ ने स्वीकार किया। यह जीआरएसई द्वारा निर्मित 801वां पोत है। कंपनी ने अब तक 112 युद्धपोतों का निर्माण किया है, जो एक अद्वितीय रिकार्ड है।

जीआरएसई के 65 साल के इतिहास में हिमगिरि सबसे बड़े और सबसे परिष्कृत गाइडेड-मिसाइल फ्रिगेट परियोजना का हिस्सा है। ऐसे तीन युद्धपोतों के निर्माण पर कुल 21,833 करोड़ रुपये से अधिक का खर्च अनुमानित है। 14 दिसंबर 2020 को लांच किया गया हिमगिरि ब्रह्मोस एंटी-शिप और लैंड-अटैक क्रूज मिसाइलों के साथ-साथ बराक 8 एंटी-एयरक्राफ्ट मिसाइलों से लैस है। जाहिर तौर पर यह नौसैनिक हमले और रक्षात्मक क्षमताओं में एक बड़ी छलांग का हिस्सा है।

यह युद्धपोत डीजल इंजन और गैस टर्बाइन के संयोजन से संचालित होता है। साथ ही यह उन्नत एईएसए रडार और आधुनिक लड़ाकू प्रणालियों से लैस तथा वायु-रोधी, सतह-रोधी और पनडुब्बी-रोधी युद्ध संचालन में सक्षम है। खास बात यह भी है कि हिमगिरि पर तैनात किए जाने वाले 225 नौसैनिकों तथा अधिकारियों के लिए इसमें आरामदायक आवास भी हैं।

- नौसेना की मारक क्षमता में होगा जोरदार इजाफा, ऐसे तीन युद्धपोत नौसेना को दिए जाएंगे
- हिमगिरि ब्रह्मोस एंटी-शिप वलैंड-अटैक क्रूज मिसाइल, बराक-8 मिसाइलों से भी लैस

कोलकाता में गुरुवार को भारतीय नौसेना को युद्धपोत 'हिमगिरि' सौंपते रक्षा कंपनी गार्डन रीच शिपबिल्डर्स एंड इंजीनियर्स (जीआरएसई) के अधिकारी ● प्रेट्र

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## Navy takes delivery of Project 17A frigate Himgiri from GRSE

***Source: The Hindu, Dt. 01 Aug 2025***

The Indian Navy on Thursday received the advanced guided-missile frigate Himgiri built by Garden Reach Shipbuilders and Engineers (GRSE) in Kolkata. The Navy called it a major milestone in achieving self-reliance in warship design and construction. Himgiri (Yard 3022) is the third ship of Nilgiri Class (Project 17A) and the first of the class built at GRSE. The Project 17A frigates are versatile multi-mission platforms, designed to address current and future challenges in the maritime domain.

According to the Navy, Himgiri is a reincarnation of the erstwhile INS Himgiri, a Leander-class frigate, that was decommissioned on May 6, 2025, after 30 years of glorious service to the nation. Designed by the Warship Design Bureau (WDB) and overseen by the Warship Overseeing Team (Kolkata), the ship is modular, ergonomic and built within the envisaged timelines.

Launched on December 14, 2020, Himgiri is equipped with BrahMos anti-ship and land-attack cruise missiles, along with Barak 8 anti-aircraft missiles, representing a major leap in naval strike and defensive capabilities. With high indigenous content, the ship stands as a strong symbol of India's self-reliance in defence production.

The frigate is powered by a combination of diesel engines and gas turbines and equipped with advanced AESA radar and modern combat systems. It is capable of anti-air, anti-surface, and anti-submarine warfare operations. The platform offers advanced survivability and improved

operational capabilities. Himgiri also features comfortable accommodation for 225 personnel and provides full aviation facilities for operation of helicopters onboard the vessel. Currently, GRSE is working on 15 warships across four different classes for the Navy.


*Garden Reach Shipbuilders and Engineers (GRSE) officials and Navy officers exchange documents at the handing over of frigate Himgiri in Kolkata on Thursday (July 31, 2025)*

With an indigenous content of 75%, the project has involved over 200 MSMEs at GRSE and enabled generation of employment for approximately 4,000 personnel directly and more than 10,000 personnel indirectly.

https://www.thehindu.com/news/national/navy-takes-delivery-of-first-project-17a-frigate-himgiri-from-grse/article69878766.ece

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## Second Edition of India-UAE Defence Industry Partnership Seminar Held on JDCC Sidelines

***Source: Press Information Bureau, Dt. 31 Jul 2025***

On the sidelines of the Joint Defence Cooperation Committee (JDCC), a seminar on the India-UAE Defence Industry Partnership was held at the India Habitat Centre, New Delhi, on July 31, 2025. Organised under the aegis of the Department of Defence Production and jointly coordinated by Society of Indian Defence Manufacturers (SIDM) & UAE's EDGE Group, the event witnessed participation from over 90 Indian defence companies and eight UAE firms. Secretary (Defence Production) Shri Sanjeev Kumar and Under Secretary of Defence, UAE Staff Lt Gen Ibrahim Nasser Al Alawi, co-chaired the event.

Building on the first India-UAE Defence Industry Partnership Forum held in Abu Dhabi in September 2024, this second edition focused on expanding industry-to-industry collaboration in areas including unmanned systems, naval platforms, precision munitions, cyber defence, AI, and space-based technologies. Shri Sanjeev Kumar emphasised the importance of institutional cooperation and identified key domains for future engagement. Lt Gen Al Alawi echoed these

sentiments, highlighting opportunities for advanced technology partnerships and acknowledging the strength of India's growing defence industry.

The seminar reaffirmed the commitment of both nations to forge a future-ready, resilient and trusted defence partnership extending beyond transactional cooperation. The event concluded with B2B discussions focusing on aligning capabilities in defence manufacturing, MRO, aerospace, and emerging technologies paving the way for self-reliance & export-led growth.

Ambassador of India to UAE Shri Sanjay Sudhir; Chief of Defence & Security Industrial Affairs, Tawazun Council, Matar Ali Al Romaithi; President, SIDM Shri Rajinder Singh Bhatia and MD & CEO, EDGE Group Mr. Hamad Al Marar were also present on the occasion.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2150944

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# Unleashing India's Intelligence Power

***Source: The Pioneer, Dt. 01 Aug 2025***

Modern warfare has transformed. It's no longer just about hardware, but increasingly a battle of information, where AI-driven intelligence is the ultimate force multiplier. From real-time combat decisions to geopolitical shifts, AI reshapes defence. While India prioritises indigenous AI/ML, its full strategic potential remains constrained. The core argument is clear: India needs a sophisticated, integrated intelligence backbone — a unified platform fusing all data, from classified military intelligence and real-time sensor feeds to open-source information. Without this integration, our AI's capacity for real-time, actionable output is limited, hindering our ability to reshape alliances and contribute as a global security partner.

**India's Unmet Intelligence Challenge**

India's commitment to self-reliance in defence is undeniable. Our defence budget for FY 2025- 26 is a record high, with a substantial portion earmarked for domestic procurement. DRDO's RCD budget has surged for AI/ML, yielding successes like indigenous swarm drones and AI-based predictive maintenance for the Sukhoi-30 MKI fleet. We are also deploying AI on tactical edge devices for faster, localised decision-making, and systems like Akashteer are beginning to process air defence data in near real-time.

Yet, a critical gap persists, especially given India's historical position as the world's second — largest arms importer (2020-2024). Much of our current indigenous AI relies primarily on open-source information. While valuable, this data is incomplete and lacks the depth crucial for dynamic military operations. It cannot provide the granular, timely, and classified intelligence commanders need for split-second decisions on a rapidly evolving battlefield. AI's analytical power remains limited without access to sensitive, classified data.

An effective AI-driven defence ecosystem requires a secure "infrastructure for intelligence." This platform must seamlessly fuse information from all streams: classified signals, imagery, human intelligence, real-time sensor feeds, and cyber threat data. The challenge lies in connecting disparate classified databases, overcoming siloed systems, and ensuring secure, ultra-low latency processing. Without this foundational integration, our advanced AI tools, currently in isolated pockets, cannot provide the holistic, predictive, and truly actionable operational picture essential

for modern multi-domain warfare. We risk having advanced components but lacking the unified nervous system to translate intelligence into decisive advantage.

**A New Era for Alliances**

Bridging this intelligence gap is a geopolitical imperative that will redefine India's strategic alliances:

Firstly, it enables proactive deterrence. Fusing classified and unclassified data in real-time grants unparalleled situational awareness across all domains. This allows for superior predictive analysis and swift, decisive action, signaling to adversaries India's comprehensive understanding and rapid response capabilities, thus contributing significantly to regional stability.

Secondly, it empowers the Global South. India's rapidly growing defence exports, reaching over 80 countries, demonstrate our commitment as a security partner. By offering integrated intelligence platforms that provide real-time decision support — beyond just hardware — India can uniquely empower nations often lacking such sophisticated systems. This fosters deeper trust and strategic interdependence, positioning India as a crucial player in global South-South cooperation and technological self-reliance. Lastly, it elevates partnerships with advanced economies.

As India develops a sophisticated indigenous intelligence backbone, our relationship with countries like the US or France transforms. We become a co-developer and strategic collaborator, able to securely share and leverage fused, real-time intelligence. This builds immense trust, enables deeper joint exercises, and enhances interoperability, allowing India to play a more proactive and indispensable role in shaping global security architectures as a technological peer.

**Building India's Strategic Advantage**

Realising this vision demands overcoming formidable challenges. Technically, data integration is immense, requiring secure, ultra-low latency fusion of diverse, classified data. Robust cybersecurity is paramount. Beyond technology, human and organisational challenges are critical: a shortage of specialised AI/ML talent with security clearances, and deep-seated inter- agency silos that fragment data and efforts.

To accelerate, India needs a dedicated, national endeavour:

Targeted Investment: Beyond general RCD, significant capital outlay for this backbone is essential. Initiatives like iDEX and ADITI must expand their scope to incentivise firms working on secure, classified data integration.

Scaled Public-Private Partnership (PPP): India's vibrant tech ecosystem must be leveraged under stringent security frameworks. Seamless government-industry collaboration is vital for sensitive defence applications.

Unified National Vision: An overarching national strategy and architecture is crucial. A high-level apex body, empowered to break down silos and ensure seamless interoperability across defence and intelligence agencies, is needed to create a true "sensor-to-shooter" capability.

India's commitment to indigenous AI/ML in defence is clear. Yet, our strategic prowess will ultimately be measured by our ability to transform disparate data —both open-source and classified — into decisive, real-time action. By prioritising and building an indigenous, integrated intelligence backbone, India stands on the cusp of a profound transformation. This will be more than a military upgrade; it will fundamentally alter our geopolitical standing, enabling us to project power not merely through weaponry, but through superior, actionable intelligence. This capability

will solidify India's position as a technologically advanced, truly self-reliant, and indispensable global partner, driving meaningful alliances and contributing significantly to stability. This is the next frontier for India's strategic autonomy.

https://www.dailypioneer.com/2025/columnists/unleashing-india---s-intelligence-power.html

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# Why India's new 'bunker-buster missile' has rattled Pakistan

***Source: The Times of India, Dt. 01 Aug 2025***

**Jayanta Kalita**

India is reportedly developing a hypersonic missile capable of carrying a conventional bunker-buster warhead — perhaps a first-of-its-kind weapon in the world — triggering concerns in Pakistan that this could eventually be used to target high-value nuclear infrastructure across the border.

Media reports on India's bunker-buster missile programme surfaced last month, shortly after the US conducted airstrikes on deeply buried Iranian nuclear facilities using its GBU-57A/B Massive Ordnance Penetrators (MOP).

Rabia Akhtar, a prominent Pakistani expert on strategic affairs, has voiced serious concerns about the implications of India's missile carrying a bunker-buster bomb.

Writing in the Dawn newspaper, she speculated that the weapon — likely a modified version of India's Agni-V intercontinental ballistic missile (ICBM) — could be deployed in a future conflict with Pakistan, which had suffered significant losses during Operation Sindoor.

"This development blurs the line between conventional and nuclear strategy," she says, arguing that "using a non-nuclear warhead to destroy an enemy's nuclear assets might appear to avoid crossing the nuclear threshold" as India maintains a no-first-use policy.

PTI

A 2015 file photo of indigenously developed Agni-5 missile

India's DRDO, responsible for the Agni missile series and other strategic weapons programmes, has so far remained silent on reports of this new missile system.

## Why is India opting for a missile?

According to an India Today report, the new variant of the Agni-V would be armed with a conventional warhead unlike the original ICBM, which is designed to carry nuclear warheads. It would fly at hypersonic speeds — more than five times the speed of sound.

The 7,500kg warhead will be able to penetrate at least 200 feet underground before detonation, like its US counterpart. However, given this heavy payload, the new missile would have a reduced range of 2,500km compared to the 5,000km range of the Agni-V ballistic missile.

India's plan, the report claims, is aimed at creating a cheaper and flexible platform to deliver bunker buster bombs compared to the highly expensive bombers currently used by the US and Russia. India, anyway, doesn't operate any bomber.

The 13,600kg GBU-57 A/B can only be delivered by US Air Force's B-2 stealth bombers – the world's costliest aircraft with each unit exceeding $2 billion.

## What Pak expert claims

Pakistan's latest apprehensions appear to be driven by India's recently unveiled national security doctrine, which asserts that any future terrorist attack on Indian soil will be considered an act of war.

In the wake of Operation Sindoor, India further emphasised that it would not "tolerate any nuclear blackmail" — a tactic New Delhi accuses Islamabad of exploiting for years to shield its support for terrorism.

While India maintains a declared no-first-use nuclear policy, Pakistan views its nuclear arsenal as a deterrent specifically against India's conventional military superiority.

However, Akhtar, dean of the Faculty of Social Sciences at Lahore University, claims that India might attempt a limited conventional strike on Pakistan's nuclear infrastructure — aimed at staying below the nuclear threshold while still delivering a decisive blow.

But she warned that such a move could trigger a nuclear war. "This is an illusion, perhaps even a dangerous hoax. From the standpoint of Pakistan or any nuclear-armed target, the method of attack matters far less than the target. Firing a high-speed ballistic missile at Pakistan's missile silos or nuclear warhead bunkers would almost certainly be viewed as part of a nuclear first strike, regardless of the warhead type," claimed Akhtar, who is also a visiting scholar at the Harvard Kennedy School.

"Even if those missiles carried conventional explosives, the effect might be to trigger Pakistan's own nuclear release, for instance, firing tactical nukes at Indian forces or strategic nukes at Indian cities, under the logic of 'better now than never'," she added.

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# डोकलाम के पास भारत ने बनाई ऑल वेदर रोड, शुभारंभ आज

*Source: NavBharat Times, Dt. 01 Aug 2025*

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■ **नई दिल्ली:** भारत ने भूटान में एक अहम सड़क का निर्माण किया है, जो डोकलाम के पास है। इस सड़क से रणनीतिक रूप से अहम भूटान की हा वैली तक हर मौसम में बेहतर कनेक्टिविटी सुनिश्चित हो सकेगी। भूटान की हा वैली डोकलाम से करीब 21 किलोमीटर की ही दूरी पर है। भूटान में इस सड़क का निर्माण बॉर्डर रोड ऑर्गनाइजेशन (BRO) ने करीब 254 करोड़ रुपये की लागत से किया है। इस सड़क का 1 अगस्त को भूटान के प्रधानमंत्री ल्योनचेन दशो त्शेरिंग उद्घाटन करेंगे। यह सड़क सिर्फ स्थानीय लोगों के लिए ही नहीं बल्कि मिलिट्री मूवमेंट के लिए अहम रहेगी।

> भूटान के साथ ही भारत के लिए भी रणनीतिक रूप से अहम है यह सड़क

यह सड़क वेस्टर्न भूटान की तरफ चुंबी वैली की तरफ जाती है। तिब्बत ऑटोनोमस रीजन में चुंबी वैली अहम है, क्योंकि यहां चीन के सैनिकों के मौजूदगी है। यह सड़क चुंबी वैली बॉर्डर तक पहुंचने के लिए भूटानी आर्मी के लिए अहम होगी। यह सड़क भूटान की जरूरत थी, हालांकि इस ओवरऑल रोड से भारत को भी फायदा होगा। भूटान मजबूत होगा तो भारत के लिए चीन को काउंटर करना भी आसान होगा, क्योंकि भारत और भूटान के पुराने संबंध हैं।

**डोकलाम है खास:** 2017 में चीन ने डोकलाम के जामफेरी रिज तक जाने के लिए सड़क बनाने की कोशिश की थी, जिससे गाड़ियां सीधे जामफेरी रिज तक पहुंचें। सड़क बनाने की कोशिश का भारतीय सेना ने विरोध किया। ऑपरेशन जूनिपर चलाया। भारतीय सैनिक डोकलाम एरिया पहुंचे और सैनिकों ने ह्यूमन चेन बनाकर चीनी सैनिकों को रोड का काम करने से रोका। 72 दिन तक चले गतिरोध के बाद चीनी सैनिकों को वापस जाने को मजबूर होना पड़ा। हालांकि बाद में चीनी सेना ने डोकलाम में कई इंफ्रास्ट्रक्चर और हेलिपैड बनाए और वहां करीब 600 सैनिकों की स्थाई तौर पर तैनाती की। जामफेरी रिज की अहमियत यह है कि जामफेरी रिज पर जो पहले पहुंचेगा वह दूसरे पर पूरी तरह हावी हो सकता है। अगर चीनी सैनिक जामफेरी रिज तक पहुंच जाते हैं तो उन्हें वहां से भारतीय सेना के डोकला पोस्ट पहुंचने में देर नहीं लगेगी। जामफेरी रिज से सीधे सिलिगुड़ी कॉरिडोर पर नजर रखी जा सकती है। यह कॉरिडोर बेहद अहम है। इसे चिकन नेक भी कहते हैं।

**प्रॉजेक्ट दंतक के तहत पूरा किया काम:** इस सड़क को BRO के 'प्रॉजेक्ट दंतक' के तहत पूरा किया गया है। इंडियन आर्मी चीफ जनरल उपेंद्र द्विवेदी ही कुछ दिनों पहले ही भूटान के दौरे पर थे। जहां उन्हें इस प्रोजेक्ट के बारे में भी बताया गया।

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# घातक और स्मार्ट हथियारों का सजा मेला

*Source: NavBharat Times, Dt. 01 Aug 2025*

Photos : Sunil Kataria

## 5 मिनट में डेटा रिकवर

फरेंसिक टूल्स के लिए एक अनोखी डिवाइस प्रदर्शित की गई। इसमें किसी भी मोबाइल फोन या स्मार्ट वॉच को उस डिवाइस पर रखने के बाद 5 मिनट के अंदर स्क्रीन पर डिलीट डेटा, व्हाट्सअप चैट, फोटो वीडियो यहां तक कि क्लाउड्स पर मौजूद डेटा को रिकवर किया जा सकता है। एक्सपो में कानपुर ऑर्डिनेंस फैक्ट्री के अत्याधुनिक राइफल्स का प्रदर्शन किया गया। जिसकी अनुमानित कीमत 16 लाख बताई जाती है। अधिकतर ड्रोन खेती में इस्तेमाल होने वाले हैं।

■ **प्रगति मैदान** के भारत मंडपम के हॉल नंबर 12 और 12A में इंटरनैशनल पुलिस एक्सपो और ड्रोन इंटरनैशनल एक्सपो 2025 की शुरुआत हुई है। यह पुलिसिंग, फॉरेंसिक साइंस, इंटरनल सिक्योरिटी, डिफेंस, फायर आर्म्स, ड्रोन और एंटी-ड्रोन सिस्टम पर केंद्रित है। इस एक्सपो में अलग अलग राज्यों की पुलिस, फॉरेंसिक, साइबर एक्सपर्ट पहुंचे हुए हैं।

एक्सपो में KVERTUS AD G–6+ ने सभी को आकर्षित किया। यह एक एंटी-ड्रोन गन है। जो एफपीवी ड्रोन को जाम करने के लिए इस्तेमाल की जाती है। आयोजक ने बताया कि यह फील्ड इंडिकेटर से लैस है। यह यूक्रेन बेस्ड कंपनी का डिफेंस प्रोडक्ट है। चर्चा में कामिकेज ड्रोन भी। यह छोटा मानवरहित विमान है, जो विस्फोटकों से भरा होता है। इन्हें सीधे किसी टैंक या सैनिकों के ग्रुप पर टारगेट किया जा सकता है। इन छोटे घातक ड्रोन को रडार से पकड़ना बहुत मुश्किल है। इन ड्रोन को फेशियल रिकग्निशन का यूज करके टारगेट को ध्वस्त करने के लिए प्रोग्राम किया जा सकता है। एक्सपर्ट बताते हैं कि हाल के दिनों में ईरान इजरायल, रूस यूक्रेन के बीच इसका जमकर इस्तेमाल हुआ।

**आज शाम 6 बजे तक चलेगा एक्सपो**

एक्सपो में 'रैपिड ड्रग स्क्रीनिंग' डिवाइस का प्रदर्शन किया गया है। यह छोटी सी डिवाइस चरस, गांजा, हेरोइन, कोकीन या किसी भी तरह के ड्रग्स लिए हुए शख्स का एक्यूरेट रिजल्ट देती है। दावा है कि इस डिवाइस का केरल, गुजरात, कर्नाटक में एनसीबी व ड्रग्स से जुड़ी एजेंसियां इस्तेमाल कर रही हैं।

## हाईटेक टेक्नॉलजी पर सबकी नज़र

आयोजकों का दावा है कि लगभग 20 देशों की 300 वर्ल्ड क्लास कंपनी इसमें हिस्सा ले रही हैं। विशेष तौर पर ब्रिटेन, अमेरिका, इजरायल, जर्मनी, फ्रांस, दुबई, यूएई, सिंगापुर, ऑस्ट्रेलिया, रूस, स्पेन, इटली, डेनमार्क और स्वीडन के खास किस्म के हथियार, सर्विलांस सिस्टम, ड्रोन और अन्य रेस्क्यू टेक्नोलॉजी की करिश्माई पर सबकी नजर है। दिलचस्प है कामिकेज ड्रोन, बख्तरबंद एम्बुलेंस, हथियार और गोला–बारूद, सर्विलांस ड्रोन, एआई डिफेंस सिस्टम, क्राउड कंट्रोल सिस्टम, एंटी–ड्रोन गन, मोबाइल फोरेंसिक टेक्निक, रेस्क्यू नौकाएं, साइबर सिक्योरिटी, न दिखने वाले ड्रोन, आंसू गैस ड्रोन, कार्गो ड्रोन। दावा है कि 4000 से अधिक पुलिस और डिफेंस ऑफिसर और एक्सपर्ट के सामने प्रदर्शित किया गया है। इसमें इंटरनैशनल ड्रोन एक्सपो, होमलैंड सिक्योरिटी, पुलिस एक्सपो, सीसीटीवी एक्सपो बेस्ड है।

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# भारत, ब्राज़ील ने रक्षा संबंधों को बढ़ावा देने पर दिया ज़ोर

***Source: Jansatta, Dt. 01 Aug 2025***

भारत और ब्राजील के शीर्ष अधिकारियों ने ब्राजील में एक महत्त्वपूर्ण रक्षा बैठक की, जिसका उद्देश्य हिंद-प्रशांत और लैटिन अमेरिका में क्षेत्रीय सुरक्षा को मज़बूत बनाना और सैन्य सहयोग व रक्षा उद्योग संबंधों को प्रगाढ़ करना था। भारतीय रक्षा मंत्रालय ने गुरुवार को बताया कि 30 जुलाई को ब्रासीलिया में 8वीं संयुक्त रक्षा समिति की बैठक हुई। मंत्रालय ने 'एक्स' पर एक पोस्ट में कहा कि संयुक्त सचिव (आइसी) श्री विश्वेश नेगी और नीति एवं रणनीति के उप प्रमुख मेजर जनरल विलेन कोजी कामेई के नेतृत्व में हुई वार्ता में हिंद-प्रशांत और लैटिन अमेरिका में सैन्य सहयोग, प्रशिक्षण, रक्षा उद्योग संबंधों और क्षेत्रीय सुरक्षा को बढ़ावा देने पर ध्यान केंद्रित किया गया। पोस्ट के साथ बैठक की तस्वीरें भी साझा की गई थीं। मंत्रालय ने 'एक्स' पर एक पोस्ट में कहा कि संयुक्त सचिव (आइसी) विश्वेश नेगी ने ब्रासीलिया में 8वीं संयुक्त रक्षा समिति की बैठक के दौरान ब्राजीलियाई सशस्त्र बलों के चीफ ऑफ जॉइंट स्टाफ, फ्लीट एडमिरल रेनाटो रोड्रिग्स डी अगुइर फरेयर से मुलाकात की।

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# Science & Technology News

## ISRO plans four major satellite launches this year

***Source: The Tribune, Dt. 01 Aug 2025***

Following the successful launch of the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite, the Indian Space Research Organisation (ISRO) has announced plans for four major satellite missions later this year.

These upcoming satellites are expected to support critical sectors such as agriculture, weather forecasting, climate monitoring, secure communications, navigation services and oceanography.

According to ISRO officials, Oceansat-3A is slated for launch within this financial year. It will support marine resource management, phytoplankton biodiversity mapping and algal bloom detection.

Union Minister Dr Jitendra Singh told Parliament that India currently has space cooperation agreements with 61 countries and five multilateral bodies. ISRO has undertaken joint satellite missions, hosted foreign payloads, set up overseas ground stations and engaged in collaborative experiments and data sharing.

Singh also revealed that ISRO has proposed a G20 Satellite Mission for Environment and Climate Observation, and will collaborate with Japan's space agency JAXA on the upcoming LuPEX/Chandrayaan-5 lunar mission. Additionally, the Venus Orbiter Mission will carry payloads from Russia and Sweden.

ISRO Chairperson Dr V Narayanan confirmed that the US communication satellite BlueBird Block 2 will be launched by ISRO.

Singh cited data from IN-SPACe (Indian National Space Promotion and Authorisation Centre), noting that 400 non-government entities (NGEs) have submitted over 650 proposals for various support activities, including technology transfers, mentorship and authorisations.

"So far, IN-SPACe has facilitated 93 technology transfers to NGEs. These initiatives are driving innovation and attracting significant investments. Cumulatively, Indian space startups have received $430 million in investments till March 2025," Singh added.

https://www.tribuneindia.com/news/agriculturetech/isro-plans-four-major-satellite-launches-this-year

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## India's space odyssey comes of age

***Source: The Pioneer, Dt. 01 Aug 2025***

Vikram Sarabhai, the father of India's space programme had a dream. He wanted to leverage space technology for India's development and progress, focusing on practical applications like communication, weather forecasting and resource management. He envisioned a self-reliant India

that could utilise space technology to uplift its people and address societal challenges. Over the years India has been moving in that direction, realising the dream of Vikram Sarabhai. It has an advance space programme which is world class and has used it for the betterment of its people from weather forecasting and mapping India's natural resources. India yet again did that on Wednesday with successful launch of NISAR — the NASA–ISRO Synthetic Aperture Radar Satellite — from Sriharikota.

This $1.3-billion Earth observation satellite, the most expensive of its kind in the world, was not just a technological milestone but a powerful symbol of how far India's space programme has come. Developed jointly by ISRO and NASA, NISAR represents the first major collaboration of its kind between the two agencies.

This isn't just about launching a satellite. It's about what it represents. When India launched its first satellite, Aryabhata, in 1975 with Soviet assistance, it was dependent on foreign platforms and expertise. Today, it is launching one of the most complex satellites in the world, co-developed with NASA, and doing so on its own rocket, the GSLV-F16. NISAR is the first satellite to use dual-frequency radar, with NASA contributing the L-band radar and ISRO supplying the S-band radar.

This hybrid system allows for an unprecedented level of detail in imaging Earth's surface. NISAR will orbit the Earth every 97 minutes, capturing high-resolution snapshots of the planet every 12 days. These images will help scientists track changes in the Earth's landmass — from deforestation and glacier shifts to soil movement, agricultural patterns and even early warning signs of earthquakes and landslides. NISAR could become a vital tool to counter climate change.

Indeed the credit goes to ISRO scientists for transforming ISRO into a world-class space agency. From launching low-cost satellites and interplanetary probes to developing indigenous cryogenic engines, ISRO has matured into a reliable and respected space agency. What makes NISAR different, however, is that it positions India not just as a provider of launch services, but as a co-designer of global scientific infrastructure.

India and the US, the two great countries have joined hands to build a transformative satellite, and it was launched from Indian soil. It signals trust, capability, and a shared commitment to pushing the boundaries of Earth science. NISAR may well be the beginning of a deeper collaboration between India and global space agencies. With India preparing for its human space flight mission, Gaganyaan and exploring future planetary and lunar ventures, partnerships like this one will be crucial. At the same time, India's increasing ability to independently execute complex missions gives it a strong footing in shaping the future of space exploration. The success of NISAR is, in every sense, a coming-of-age moment. And as the GSLV-F16 roared into the skies with NISAR onboard, it carried more than a satellite — it carried the promise of a future where India is at the forefront of space innovation.

https://www.dailypioneer.com/2025/columnists/india---s-space-odyssey-comes-of-age.html

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# Steps to Bolster India's Research and Innovation Ecosystem

***Source: Press Information Bureau, Dt. 31 Jul 2025***

On July 1, the Union Cabinet approved the Research, Development, and Innovation (RDI) Scheme to incentivize private sector participation in research and development (R&D).

The scheme has a total outlay of ₹1 lakh crore over 6 years, with ₹20,000 crore allocated for FY 2025–26. Technology sectors of strategic importance have been identified under the RDI Scheme. These include energy security, climate action, and deep technologies such as quantum computing, artificial intelligence, biotechnology, and the digital economy. The scheme also covers sectors critical for strategic and economic security, with the flexibility to include additional sectors based on approval from the Empowered Group of Secretaries (EGoS).

The RDI Scheme aims to catalyze private sector participation in high-impact R&D and innovation across sunrise sectors and those critical to economic security, self-reliance, and strategic interests. The RDI Scheme aims to address funding gaps in private sector R&D by providing growth and risk capital to sunrise and strategic sectors. It supports innovation, technology adoption, and competitiveness, with sector selection guided by India's economic priorities, strategic needs, and potential for global value chain integration.

It supports transformative projects at Technology Readiness Levels (TRL) 4 and above, enables acquisition of strategically important technologies, and promotes the creation of a Deep-Tech Fund of Funds.

The RDI Scheme has identified key strategic and sunrise sectors such as energy security, climate action, quantum technologies, AI, biotechnology, semiconductors, and the digital economy, with flexibility to include others based on national priorities. It aligns with the 'Make in India' mission by promoting indigenous development of critical technologies and reducing import dependence, thereby strengthening domestic high-tech manufacturing. It supports the 'Startup India' mission by providing equity and long-term financing to deep-tech startups, fostering innovation, and enabling commercialization through a dedicated Deep-Tech Fund of Funds and specialized implementing agencies.

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

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2150818

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# Research Development And Innovation Scheme in Deep Tech Areas

***Source: Press Information Bureau, Dt. 31 Jul 2025***

The Government has initiated several steps to promote R&D in deep tech areas such as AI, robotics, automation, renewable energy, small nuclear, drones, biotechnology, and climate tech as per following details:

The Department of Science & Technology (DST), Government of India, is implementing the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), with an outlay of Rs. 3,660.00 crore. Under this mission, a project titled "Bharat-Gen: A Suite of Generative AI Technologies for India" is being implemented with funding support of Rs. 235.17 crore at the Technology Innovation Hub (TIH) Foundation for IOT and IOE, IIT Bombay. This project is a multimodal, multilingual Large Language Model initiative, focused on developing efficient and

inclusive AI solutions in 22 Indian languages. The mission has established 25 Technology Innovations Hubs (TIHs) in reputed academic institutions across India, out of which some are working in Technology verticals related to deep tech areas including AI, robotics, automation and drones as per the following details:

| Technology Innovation Hubs (TIHs) & Host Institute (HI) | Technology Vertical (TV) | Sanctioned Budget (Amount in Rupees cr) | Released Budget (Amount in Rupees cr) |
|---|---|---|---|
| IIT Kharagpur AI4ICPS I-Hub Foundation, IIT Kharagpur | Artificial Intelligence and Machine Learning | 24.45 | 24.45 |
| I-HUB for Robotics and Autonomous Systems Innovation Foundation, IISc Bengaluru | Robotics & Autonomous Systems | 270.00 | 114.25 |
| NMICPS Technology Innovation Hub on Autonomous Navigation Foundation (TiHAN), IIT Hyderabad | Autonomous Navigation and Data Acquisition systems (UAV, RoVetc) | 185.00 | 128.43 |
| I-Hub Foundation for Cobotics (IHFC),IIT Delhi | Cobotics | 127.95 | 85.91 |

Climate, Energy and Sustainable Technology (CEST) division of DST is supporting several initiatives to promote R&D in deep tech areas related to renewable energy and climate tech. These include projects in areas of new and emerging storage technologies, advanced hydrogen and fuel cells, methane mitigation, carbon capture and utilization, and hard-to-abate sectors. Electric Vehicle Solutions led by Startups (EVolutionS) programme of DST supports innovative deep tech startups in translating their proof of concepts and prototypes into commercially viable products through Technology Business Incubators (TBIs), with an aim to accelerate Electric Vehicle component development to create robust supply chain ecosystem in the country. Further, under the Climate Change Programme, techniques have been developed for weather and climate prediction using AI/ML tools.

Under Anusandhan National Research Foundation (ANRF) projects amounting to Rs. 310.64 crore have been supported under the Electric Vehicle Mission and Intensification of Research in High Priority Areas (IRPHA) scheme.

The Department of Biotechnology (DBT) is implementing the BioE3 (Biotechnology for Economy, Environment and Employment) policy for “Fostering High-performance Biomanufacturing” across various sectors, including bio-based chemicals, precision therapeutics, climate-resilient agriculture, and biodiversity-based innovations. The policy aims at enabling start-ups, SMEs, industries and academia with access to shared infrastructure/facilities and resources for pilot & pre-commercial scale biomanufacturing of viable commercial bio-based products.

The Council of Scientific and Industrial Research (CSIR) is supporting R&D initiatives in the deep tech domains such as AI, Robotics, Drones, EV, Semiconductor designs etc, under several mission mode projects like CSIR League for AI based Industrial Manifestation (CLAIM); Design and development of a Deep Sea Autonomous Underwater Vehicle [DAUV]; AI Enabled Technologies and Systems and Medical Instruments & Devices with total budget outlay of Rs. 24.18 cr, Rs. 29.77 cr, Rs. 23.48 cr and Rs. 17.30 cr respectively.

The Ministry of New and Renewable Energy (MNRE), through its Renewable Energy Research and Technology Development Programme (RE-RTD) scheme, supports research institutions and industry to enable indigenous technology development and manufacture for widespread applications of new and renewable energy in an efficient and cost-effective manner across the country. The MNRE encourages research and technology development proposals in collaboration with the industry and provides up to 100% financial support to Government/non-profit research organizations and up to 50-70% to industry, startups& private Institutes. The total budget allocated for this scheme for Rs. 228 crore for 5 years.

The Department of Atomic Energy (DAE) is actively involved in R&D initiatives in deep-tech domains such as development of Small Modular Reactor for Clean energy. BARC has indigenously designed and developed three types of Small Modular Reactors (SMRs). DAE has developed many robotic and automation technologies for applications in high-radiation environments. The focus areas include robotics and automation for active applications to reducing man-rem expenditure during material handling, inspection and application in emergency situations. Indira Gandhi Centre for Atomic Research (IGCAR) has undertaken R&D towards utilization of robotic technologies in hot-cells of reprocessing facilities, post irradiation examination laboratories and In-service inspection of the reactor components, particularly in Prototype Fast Breeder Reactor (PFBR). Variable Energy Cyclotron Centre(VECC), use many deep tech domains such as AI, Robotics, Drones and Semiconductor designs for applications in accelerators, nuclear electronics, cybersecurity, office automation, etc. and the spin-off (s) are being used in other areas. Bhabha Atomic Research Centre (BARC) have Rs. 233.95 crores allocated for R&D projects towards development of reactor technologies, robotics and automation.

The Ministry of Electronics and Information Technology (MeitY) is engaged in R&D projects in key areas such as network and system security, digital forensics, hardware security, cybersecurity audits, and incident response. These initiatives are part of the department's mandate to strengthen national cyber security infrastructure and address relevant challenges.

The Department of Space is actively pursuing R&D activities in AI and Robotics towards Launch Vehicle Health Monitoring, Satellite Data Analysis, Space Robotics for Interplanetary Applications & Bhartiya Antariksh Station, etc.

The Government has initiated a new scheme called “Research Development and Innovation (RDI)” which aims to catalyze private sector participation in high-impact R&D and innovation across sunrise sectors and those critical to economic security, self-reliance, and strategic interests. It supports transformative projects at Technology Readiness Levels (TRL) 4 and above, enables acquisition of strategically important technologies, and promotes the creation of a Deep-Tech Fund of Funds.

The scheme has a total outlay of Rs 1 lakh crore over 6 years, with Rs 20,000 crore allocated for FY 2025–26, funded from the Consolidated Fund of India. It offers long-term low or zero-interest loans, equity investments, and contributions to Deep-Tech Fund of Funds. Grants and short-term loans are not provided under this scheme.

Fund allocation to innovators, researchers, and start-ups will be managed through a Special Purpose Fund (SPF) under the Anusandhan National Research Foundation (ANRF), which serves as the Level 1 Fund Custodian. Implementation will be carried out by Second-Level Fund Managers, including Alternate Investment Funds (AIFs), Development Finance Institutions (DFIs), Non-Banking Financial Companies (NBFCs), and Focused Research Organizations (FROs), such as BIRAC, TDB, and IIT Research Parks, with approval from the Empowered Group of Secretaries (EGoS).

The Department of Science & Technology (DST) is the nodal agency for the scheme. Oversight and governance are provided by the Governing Board of ANRF, while the EGoS, Executive Council (EC), and Investment Committees (ICs) are responsible for sector approvals, fund manager selection, project evaluation, and overall performance review.

A number of Technology sectors of strategic importance have been identified under the RDI Scheme. These include energy security, climate action, and deep technologies such as quantum computing, artificial intelligence, biotechnology, and the digital economy. The scheme also covers sectors critical for strategic and economic security, with the flexibility to include additional sectors based on approval from the Empowered Group of Secretaries (EGoS).

To enhance technology readiness and support ecosystem development, the scheme finances transformative projects at Technology Readiness Levels (TRL) 4 and above, encourages the acquisition of strategic technologies, and supports the creation of a Deep-Tech Fund of Funds.

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

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2150817

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# Parliament Question: Quantum Technology

***Source: Press Information Bureau, Dt. 31 Jul 2025***

The Government is actively advancing Quantum Technology in India:

1. The Department of Science and Technology (DST) is implementing the National Quantum Mission (NQM), approved by the Union Cabinet with a total outlay of ₹6003.65 crore for a period of eight years. Under the Mission, four Thematic Hubs (T-Hubs) have been established in key technology verticals: Quantum Computing, Quantum Communication, Quantum Sensing & Metrology, and Quantum Materials & Devices. These T-Hubs comprise 14 Technical Groups, spanning 17 States and 2 Union Territories. The core activities undertaken by these hubs include technology development, human resource development, entrepreneurship development, industry engagement, and international collaborations. Guidelines to support startups in the area of quantum technologies have also been formulated under NQM. These guidelines were adopted by the Technology Innovation Hub (TIH) – I-HUB Quantum Technology Foundation at Indian Institute of Science Education and Research (IISER), Pune; established under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). In alignment with these guidelines, the TIH at IISER Pune has supported eight startups in the field of quantum technologies.

2. Ministry of Electronics and Information Technology (MeitY) has established a Centre of Excellence (CoE) in Quantum Technology andhas alsodeployed the Metro Area Quantum Access Network (MAQAN) in Chennai, establishing a secure quantum communication testbed.
3. Defense Research & Development Organization (DRDO) has developed a 6-qubit quantum processor based on superconducting circuit technology in collaboration with Tata Institute of Fundamental Research (TIFR), Mumbai.
4. Department of Space (DoS) has demonstrated Free-space Quantum Key Distribution over a distance of 300 meter with real-time processing and live exchanges of quantum-secured network.
5. Department of Atomic Energy (DAE) has developed a cold atom-basedgravimeter at Raja Raman Centre for Advanced Technology, Madhya Pradesh.
6. The Centre for Development of Telematics (C-DOT), under the Department of Telecommunications (DoT), has developed products integrating Quantum Key Distribution (QKD) and Post-Quantum Cryptography (PQC) technologies, and has also established a Centre of Excellence in Quantum Communication.

Under the National Quantum Mission, DST has launched a Call for Proposals for development of indigenous Quantum Algorithms. The call is open to researchers and academicians, with the last date for submission being 10th August 2025.

The Government has developed a clear vision, mission, and targets for the development of quantum technologies under the National Quantum Mission. The key objectives include:

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

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

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