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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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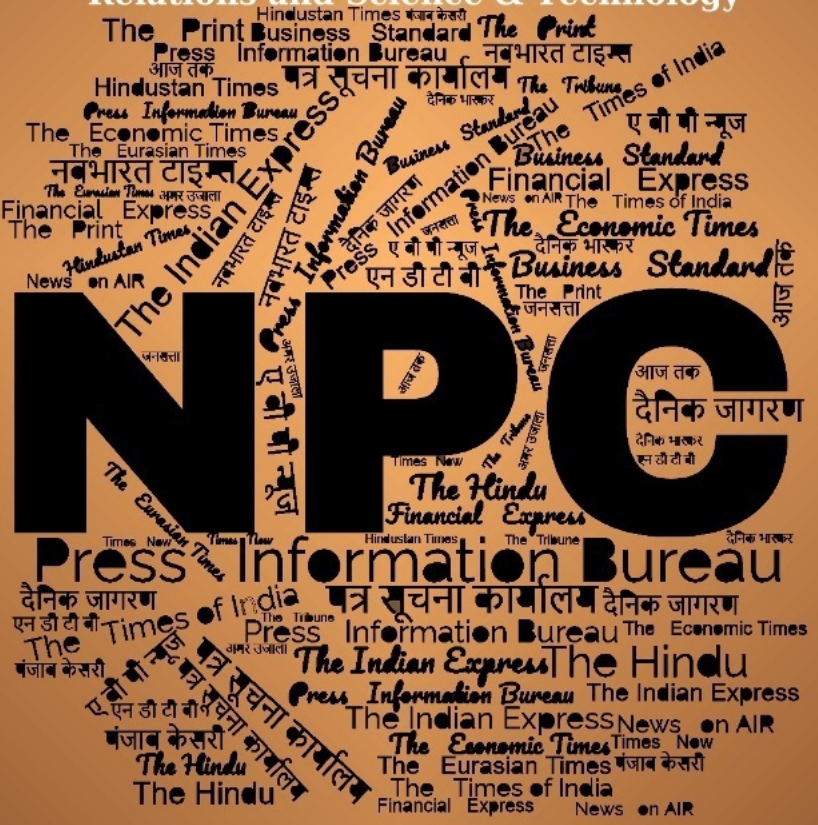

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Defence News

India may soon deploy robot soldiers on borders; manufacturing unit coming up in Nagpur

Source: The Times of India, Dt. 08 Mar 2026

Like China, even India will deploy robot soldiers along its borders in coming days — and these would be made in Nagpur, said chief minister Devendra Fadnavis. He was speaking at the ground-breaking event of a UAV and robot manufacturing unit planned by Nagpur-headquartered private ammunition firm, Solar Defence and Aerospace Limited (SDAL). Fadnavis said this is the first major investment proposed under the state's defence and aerospace policy and SDAL is expected to create robots that could replace human soldiers. Entailing an investment of Rs 12,000 crore, SDAL's unit at Mihan-SEZ is dubbed to be one of its kind in terms of scale.

The promoters expect to finish building the basic infrastructure of Unit I in a year and come up with a prototype soon. On a nostalgic note, Fadnavis said "in our childhood, we would watch a television serial, Star Wars (Star Trek), every Sunday. What was fiction has now become reality. The unit proposed to be started by SDAL is a step in this direction." "Our soldiers brave the freezing heights along the Chinese border and Siachen glacier, where temperature drops to minus 40 degrees. Earlier, China deployed soldiers along the borders with India. For the last 3 to 4 months, Indian troops are not encountering any Chinese soldier on the other side, rather they are coming across robots instead.

Soon, India would be making such robots who would stand guard on the country's frontiers," said Fadnavis. The robots would be made right at the unit in Nagpur," he said. The dynamics of warfare are changing. Even trade is being weaponized, and supply lines have become weapons. In such times, only those countries which have the latest military power and technology would be able to safeguard their sovereignty, said Fadnavis. Maharashtra govt has identified both defence and aerospace as thrust sectors. It is the age of artificial intelligence, quantum computing and semiconductors and the manufacturing sector could witness a metamorphosis in next 1,000 days.

Speaking on the occasion, Union minister for road transport and highways Nitin Gadkari said Nagpur is emerging as a defence hub. Looking at the conflicts around the world, it has become necessary for every country to acquire the latest technology. "We don't want to empower ourselves by transgressing on other nations, but only to be strong enough to ensure peace," said minister Gadkari.

https://timesofindia.indiatimes.com/city/nagpur/india-will-deploy-robot-soldiers-made-in-nagpur-along-its-borders-soon-cm/articleshow/129229254.cms

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Self-reliance only way to stay relevant in era of global unceratainity: Raksha Mantri

Source: The Times of India, Dt. 07 Mar 2026

Defence minister Rajnath Singh on Friday said that “self-reliance is the only way to stay relevant and ready in the present era of uncertainty” and emphasised that the “current global situation has

led to the realignment of supply chains, formation of new equations and constant rise in maritime activities, reaffirming the govt's resolve of attaining self-reliance in every field". "Strait of Hormuz or the entire Persian Gulf region is crucial for global energy security. When there is disturbance in the region, it directly impacts the supply of oil and gas. Moreover, we're witnessing supply chain disruptions in other sectors as well. These uncertainties have a direct impact on the economy and global trade. The global scenario is an abnormal situation. What is more worrying is the fact that this abnormality is becoming the new normal," he said.

Inaugurating 'Sagar Sankalp — Reclaiming India's Maritime Glory', a defence and maritime dialogue in Kolkata, Rajnath said, "Govt's efforts for self-reliance in the defence sector are yielding positive results as, in fiscal 2024-25, domestic defence production surpassed a record figure of Rs 1.5 lakh crore, with defence exports touching an all-time high of Rs 24,000 crore. "He said by April 2026, defence exports are poised to reach Rs 29,000 crore and the govt has set a target to export defence equipment worth Rs 50,000 crore by FY 2029-2030. "Old ideas, old global order and old perceptions are changing rapidly. These are the uncertainties we need to understand. The current situation in the Middle East is one prime example. What is happening there is quite unusual. It is difficult to make concrete comments about the future course of events in the Middle East or in our neighborhood," he said.

Terming DPSUs as a key pillar of the govt's self-reliance vision, he stated that, in the shipbuilding sector, Garden Reach Shipbuilders & Engineers Ltd and other shipyards, have also been given special focus to make the domestic industrial ecosystem strong and futuristic. "The goal is to develop ships into technology hubs, not just production units," he said. Describing "technological dynamism" as another crucial element in today's world, the minister said technology is bringing about unprecedented changes in every sphere of life, and it is even more clearly visible in the defence sector.

He highlighted that high-end and precision technologies are being used in the defence sector, and the govt aims to achieve Aatmanirbharta in defence tech to remain ready for emerging and future challenges. He acknowledged the fact that the private industry, today, contributes 25% of the defence platforms/equipment and accessories manufactured in the country, and exuded confidence that this participation will increase to 50 % share of total defence production by value in the times to come.

https://timesofindia.indiatimes.com/india/self-reliance-only-way-to-stay-relevant-in-era-of-global-uncertainty-rajnath-singh/articleshow/129177918.cms

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Need to build defence industrial complexes: Navy Chief

Source: Hindustan Times, Dt. 07 Mar 2026

Navy chief Admiral Dinesh K Tripathi on Friday said that global conflicts have raised questions about the existing notion of "short and decisive wars," adding that countries need to stay prepared for challenges by building their own defence industrial complexes. "There is obviously a thought process that the post-Cold War peace dividend has certainly ended. Therefore, countries must be ready for their own national security, and that requires building their own defence industrial complexes," Tripathi said at the 2026 Raisina Dialogue, a conference on geopolitics and geoeconomics held annually in New Delhi.

He said most countries are following this approach in some way—either individually or through partnerships with other nations. Admiral Tripathi touched upon the pressing need to stay abreast of fast-evolving technology in the defence sector during a session themed “Forgers of Peace: Ordnance Factories for the Liberal Order.”

“Not only must one produce [military equipment] at scale, but one must also be ready to upgrade while producing, because technology is changing at the speed of thought. We have seen the need for that and must be ready on that count,” he said, responding to a question on lessons learnt from military confrontations and industrial capacity requirements for modern warfare. “We have monitored global events, especially in the last three to four years, and what is loud and clear is that the idea of short and decisive wars may now face questions.” He said rapid adaptation is a must because time waits for no one, and surge capacity must be sufficient to deal with challenges.

“It is not that you will be subjected to situations when your equipment is ready. Managing inventory is critical, and we need the capacity to surge when required. That requires very evolved defence industrial bases. These are some of the lessons learnt from what is happening around the world,” said Admiral Tripathi, who spoke at length about the need to achieve self-reliance in the current global scenario.

“Whether it is the democratisation of dual-use technologies, monopolisation of resources, or weaponisation of supply chains, all these factors are forcing many countries toward self-reliance. We in India believe in Atmanirbharta [self-reliance], and like many other countries, we deal with many of our partner nations to develop capabilities in the defence sector based on co-development and co-production. We as a country are fully aware of how to work with many partners, and Russia is one of them,” he said, responding to a question on whether India’s military relationship with Russia was hindering deeper defence industrial cooperation with the US or Europe.

https://www.hindustantimes.com/india-news/countries-have-to-be-ready-for-their-own-security-navy-chief-admiral-tripathi-101772792486287.html

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Army holds ‘synergy’ conference with ITBP, BSF at Northern Command HQ in J&K

Source: The Hindu, Dt. 08 Mar 2026

The Army’s Northern Command in Jammu and Kashmir’s Udhampur district on Saturday (March 7, 2026) hosted a “synergy” conference with the Indo-Tibetan Border Police (ITBP) and the Border Security Force (BSF) to enhance coordination in view of the evolving security landscape. The conference, under the leadership of General Officer Commanding-in-Chief, Northern Command Lt. Gen. Pratik Sharma, focused on sharing insights into the operational construct, aligning strategies and capabilities to surmount emerging security challenges, officials said.

“Enhancing synergy for national security — HQ (Headquarter) Northern Command hosted a synergy conference to enhance coordination with ITBP and BSF,” the Northern Command said in a post on X. “The forum deliberated on the evolving security landscape and focused on sharing insights into the operational construct, aligning strategies and capabilities to surmount emerging security challenges,” it said.

The Army said Lt. Gen. Sharma interacted with the participants, commending them for their dedicated and resolute approach during operations. “The delibrations reinforced the spirit of synergy and trust strengthening the collective resolve towards a safer and stronger nation,” it said. An equipment display was also organised at the venue to showcase emerging technologies inducted by the forces as part of efforts to remain future-ready, it said.

https://www.thehindu.com/news/national/army-holds-synergy-conference-with-itbp-bsf-at-northern-command-hq-in-jampk/article70715574.ece

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Indian Army’s Central Command conducts its first-ever strategic communication conclave in Lucknow

Source: Press Information Bureau, Dt. 07 Mar 2026

The Indian Army’s Central Command conducted its first-ever Strategic Communication Conclave in Lucknow, Uttar Pradesh on March 07, 2026. With close to 500 people in attendance, the conclave involved deliberations and panel discussions on strategic communication in the national security architecture. The panelists and speakers included senior diplomats, communication experts from the government as well as the media. The attendees included senior military personnel from the Central Command, and communication professionals from the Government & the private sector.

In his opening address, General Officer Commanding-in-Chief, Central Command Lt Gen Anindya Sengupta highlighted the fundamental shift in the nature of warfare, which now includes information and cognitive domains. Underscoring the crucial role of perception management, he stated that perception shapes legitimacy, legitimacy shapes influence, and influence shapes outcomes. He also spoke about the weaponisation of narratives and the threat from conflicts below the threshold of war. He pointed out that strategic communication cannot remain reactive, episodic, or personality-driven, but must become institutionalised, doctrine-backed, and capability-driven.

The conclave included an expert policy-level session on institutional and national security dimensions on the theme ‘Institutionalising Strategic Communication as a Capability for Future Preparedness in the Emerging Information Space’. India’s first female Permanent Representative to the United Nations Ambassador Ruchira Kamboj (Retd), Ambassador Yashvardhan Sinha (Retd) and Lt Gen Raj Shukla (Retd) addressed the session.

A special interactive session was organised on the theme ‘Strategic Communication in Emerging Multi-Domain Operations: Strategies, Structures, Processes and Preparedness’ which integrated policy and operational perspectives. Retired civil and military officials, including Ambassador Dilip Sinha, Dr Shantanu Mukharji, Smt Veena Jain & Lt Gen DP Pandey, shared key insights during the session. Panel discussions with media on the themes ‘Shaping the mind space: Perception Management in the Strategic Domain’ and ‘Information Power and Strategic Communication’ addressed the importance of perception management & information power. The aim of the conclave was to examine strategic communication as an institutional capability within India’s national security architecture and generate actionable insights on doctrine, structures, processes & preparedness in the emerging information space.

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INS Tarangini arrives at Colombo with SLN Seariders embarked for sea training

Source: Press Information Bureau, Dt. 07 Mar 2026

Indian Navy's Sail Training Ship INS Tarangini arrived at Colombo on 06 Mar 2026, after completing sail training of Sri Lanka Navy Seariders. Three officers and 26 trainees from the Sri Lanka Naval and Maritime Academy had embarked the ship at Trincomalee for the sail training deployment.

During the sea sortie, the trainees underwent an intensive sail training and were exposed to nuances of sail setting and watchkeeping under sails. The passage provided extensive opportunities for the trainees to manoeuvre and handle the ship under the guidance of the ship's crew. The training deployment further bolstered mutual learning and interoperability between the two Navies, strengthening maritime cooperation and training engagement.

Upon arrival at Colombo, the ship was received by representatives of the Sri Lanka Navy along with officials from the High Commission of India in Sri Lanka. The Commanding Officer of INS Tarangini called on Rear Admiral Jagath Kumara, Commander Western Naval Area, and discussed avenues to enhance naval cooperation and share best practices.

During the three-day port call, the ship will undertake various bilateral training activities with the Sri Lanka Navy. In addition to professional exchanges, the crew from both Navies will participate in friendly sports fixtures, joint yoga sessions and outreach activities.

Earlier, at Trincomalee, Cmde Dinesh Bandara, Commandant of the Sri Lanka Naval and Maritime Academy, visited the ship and interacted with the crew and embarked SLN seariders. The training deployment serves as another chapter in the growing India - Sri Lanka maritime partnership.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2236440&reg=3&lang=1

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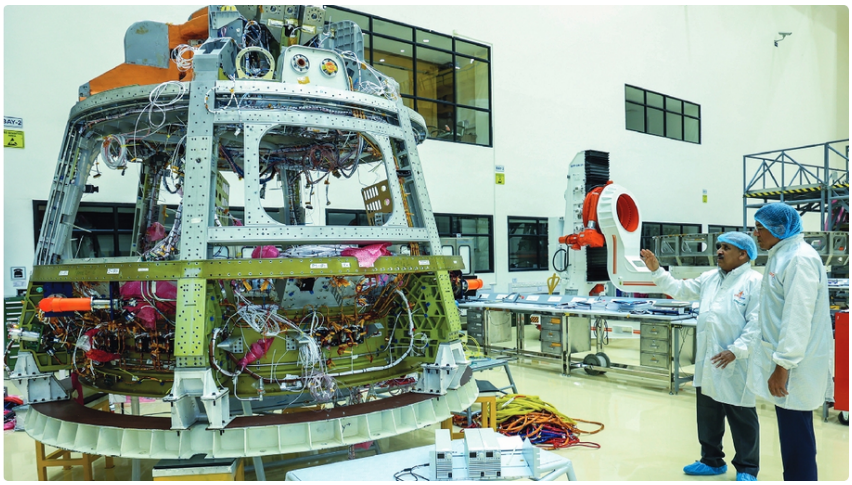
Science & Technology News

ISRO, ESA sign agreement on earth observation missions

Source: The Pioneer, Dt. 08 Mar 2026

The ISRO on Saturday announced that it has signed an agreement with the European Space Agency (ESA) to collaborate on joint calibration, validation activities and scientific studies for earth observation missions.

In a statement, the Bengaluru-headquartered space agency said the agreement titled “ESA–ISRO Arrangement concerning Joint Calibration and Validation Activities and Scientific Studies for Earth Observation Missions” was signed virtually on March 4 by ISRO Scientific Secretary M Ganesh Pillai and ESA Director for Earth Observation, Simonetta Cheli.



The arrangement strengthens their long-standing cooperation that began in 1978 and was renewed in 2002. Cheli highlighted the importance of collaboration in the context of upcoming Earth observation missions, particularly ESA’s FLEX (Fluorescence Explorer) mission aimed at improving the understanding of vegetation biology. Pillai noted that the partnership between the two agencies spans several areas, including Earth observation, navigation, ground station support and human spaceflight cooperation.

https://dailypioneer.com/news/isro-esa-sign-agreement-on-earth-observation-missions

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Found in Antarctic lake, red microbe holds big promise

Source: The Times of India, Dt. 09 Mar 2026

Scientists from the National Centre for Cell Science (NCCS) in Pune have identified a previously unknown species of bacterium collected from the ice-cold sediments of an Antarctic lake — a microbe so tough it can survive 85 minutes of direct ultraviolet radiation that would kill most living cells. The sample containing the organism, now named Deinococcus pantiae, was collected in 2019 during India’s 38th scientific expedition to Antarctica, from a lake in the Schirmacher Oasis, Queen Maud Land, where temperatures plunge below zero, nutrients are almost non-existent, and UV radiation is intense.

The microbe's name honours Aditi Pant, the first Indian woman scientist to visit Antarctica, in 1983. The bacterium's genome revealed biological pathways that could produce vitamins, generate natural antioxidants, and break down pollutants — capabilities with potential in medicine, manufacturing, and environment cleanup. "Naming the organism after Pant is an important way to acknowledge and celebrate women in science," said Avinash Sharma, senior scientist, NCCS, who led the research. "The bacterium is a tiny redpigmented sphere, less than 1.3 micrometres across. "It carries a sophisticated biological toolkit. We found multiple overlapping defense systems that explain how it endures conditions fatal to most other life forms," said Sharma.

The red pigment comes from carotenoids — natural antioxidants that shield the cell from UV damage. Beneath it is a full arsenal of DNA repair genes, internal production of glutathione — one of nature's most powerful antioxidants — and pathways for trehalose, a sugar known to protect cells against freezing, desiccation, and radiation. The genome also contained pathways for producing folic acid (vitamin B9) internally — valuable for sustainable bio-based vitamin manufacturing — and the ability to break down benzoate compounds, a class of aromatic pollutants common in industrial waste.

"That last capability raises the possibility of using the bacterium or its enzymes in environmental cleanup operations," Sharma said. "Climate change is reshaping polar habitats faster than science can document them, and some microbes which are suited only for the old conditions may vanish before they are found." The research, funded by the Science and Engineering Research Board of the Union govt, has been published in the International Journal of Systematic and Evolutionary Microbiology. The research team includes Namrata Jiya, Wormirin Khudai, Bhavuk Gupta, along with Dr Sharma at BRIC-NCCS, Pune, in collaboration with CSIR-Institute of Microbial Technology, Chandigarh.

https://timesofindia.indiatimes.com/science/found-in-antarctic-lake-red-microbe-holds-big-promise/articleshow/129301588.cms

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TDB-DST Supports MiniMines Cleantech Solutions Pvt. Ltd. for Sustainable Recycling of Lithium-ion Batteries

Source: Press Information Bureau, Dt. 06 Mar 2026

In line with the Government of India's vision to promote sustainable technologies and strengthen domestic capabilities in critical minerals, the Technology Development Board (TDB), Department of Science & Technology (DST), has extended financial support to M/s MiniMines Cleantech Solutions Pvt. Ltd. for the project titled "Sustainable Recycling of the Waste Lithium-ion Batteries."

The project aims at the commercialisation of an indigenous, zero-discharge, sustainable battery recycling and critical mineral refining process to extract battery-grade salts of lithium, cobalt, nickel, and manganese from end-of-life lithium-ion batteries. The initiative is expected to strengthen India's capability in recovering valuable critical minerals through advanced recycling technologies, thereby reducing dependence on imports and supporting the country's clean energy transition.

MiniMines Cleantech Solutions Pvt. Ltd. is the first R4 category recycler providing end-to-end solutions for end-of-life lithium-ion batteries, including Extended Producer Responsibility (EPR) services. The company has developed a proprietary process known as Hybrid Hydrometallurgy™,

which is designed to be agnostic to various lithium-ion battery chemistries and form factors. The company's black mass recovery and post-processing technology ensures low energy consumption, minimal emissions, and high separation efficiency, enabling recovery rates of up to 99 percent.

The complete process—from pre-assessment, collection, and segregation to mechanical processing and advanced post-processing stages such as extraction, selective separation, and beneficiation—has been indigenously developed and patented. This approach significantly reduces reliance on imported recycling technologies, equipment, and critical raw materials, while also promoting the concept of urban mining within the country.

Under the project, the company proposes to scale up its existing operations into a fully integrated commercial facility capable of processing multiple battery chemistries and producing high-purity critical materials for reuse. The recovered battery-grade compounds, including lithium carbonate and cobalt sulphate, will meet industry specifications and cater to both domestic and export markets.

Speaking on the occasion, Shri Rajesh Kumar Pathak, Secretary, TDB, stated, "Development of indigenous technologies for recovery and refining of critical minerals from end-of-life batteries is crucial for strengthening India's energy security and clean technology ecosystem. Through this project, TDB is supporting the commercialization of a sustainable recycling solution that can reduce import dependence, promote circular economy practices, and contribute to the objectives of the National Critical Minerals Mission."

A representative of MiniMines Cleantech Solutions Pvt. Ltd. expressed gratitude to TDB for the support and noted that the assistance would enable the company to scale its innovative recycling technology and accelerate the recovery of critical battery materials through environmentally sustainable processes.

The project represents a significant step towards building a self-reliant and technology-driven ecosystem for critical mineral recovery and clean energy materials in India. By enabling efficient extraction of valuable metals from end-of-life batteries, the initiative aligns with national priorities of Aatmanirbhar Bharat, circular economy adoption, and the development of sustainable energy infrastructure.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2235968&reg=3&lang=1

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