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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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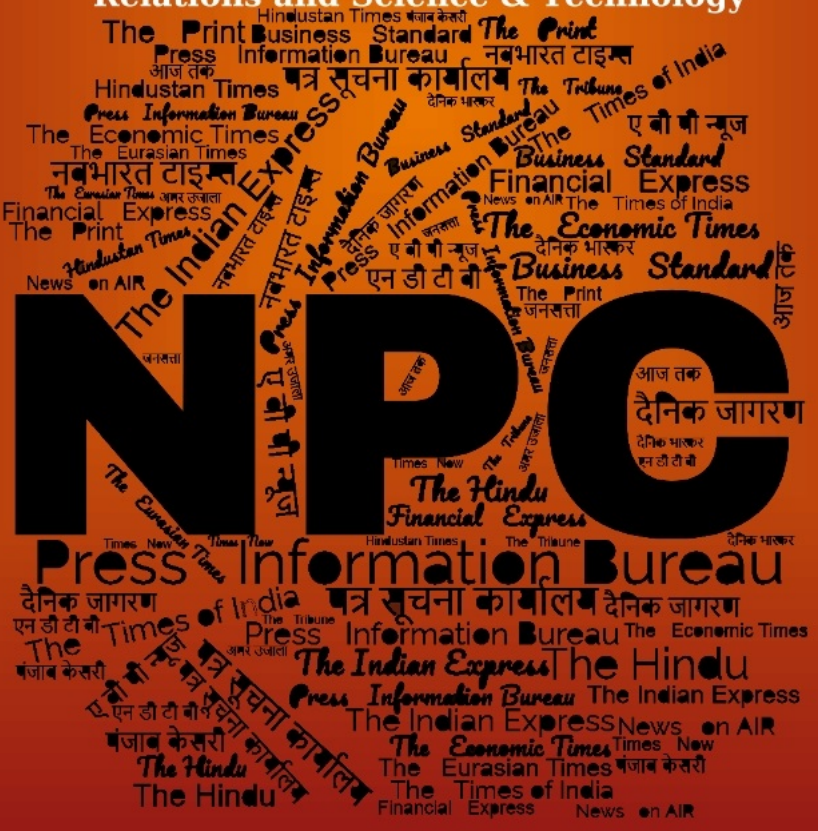

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Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Wed, 01 Jan 2025

Indian Navy Set To Commission Three Frontline Fleet Assets Nilgiri, Surat And Vaghsheer Jitendra Singh

All three Combatant Platforms to be Commissioned in a single Day

15 Jan 25 is set to become a landmark day in India's history as the Indian Navy prepares to commission three frontline combatants - Nilgiri, the lead ship of the Project 17A stealth frigate class; Surat, the fourth and final ship of the Project 15B stealth destroyer class; and Vaghsheer, the sixth and final submarine of the Scorpene-class project - together at Naval Dockyard, Mumbai.

This historic event will provide a significant boost to the Indian Navy's combat potential while underscoring the country's pre-eminent status in indigenous shipbuilding. All three platforms have been designed and constructed entirely at Mazagon Dock Shipbuilders Limited (MDL), Mumbai, a testament to India's growing self-reliance in the critical domain of defense production. The successful commissioning of these advanced warships and submarines highlights the rapid progress made in warship design and construction, cementing India's position as a global leader in defense manufacturing.

Nilgiri, the lead ship of Project 17A, is a major advancement over the Shivalik-class frigates, incorporating significant stealth features and reduced radar signatures through state-of-the-art technology. The Project 15B destroyer, Surat, is the culmination of the follow-on class to the Kolkata-class (Project 15A) destroyers, featuring substantial improvements in design and capabilities. Both ships were designed by the Indian Navy's Warship Design Bureau and are equipped with advanced sensors and weapon packages developed primarily in India or through strategic collaborations with leading global manufacturers.

Equipped with modern aviation facilities, Nilgiri and Surat can operate a range of helicopters, including Chetak, ALH, Sea King, and the newly inducted MH-60R, during both day and night operations. Features such as a Rail-Less Helicopter Traversing System and a Visual Aid and Landing System ensure seamless operations under all conditions. These ships also include specific

accommodations to support a sizeable complement of women officers and sailors, aligning with the Navy's progressive steps toward gender inclusion in frontline combat roles.

Vaghsheer

Surat

Nilgiri

Vaghsheer, the sixth Scorpene-class submarine under the Kalvari-class Project 75, is one of the most silent and versatile diesel-electric submarines in the world. It is designed to undertake a wide range of missions, including anti-surface warfare, anti-submarine warfare, intelligence gathering, area surveillance, and special operations. Armed with wire-guided torpedoes, anti-ship missiles, and advanced sonar systems, the submarine also features modular construction, allowing for future upgrades such as the integration of Air Independent Propulsion (AIP) technology.

The combined commissioning of Nilgiri, Surat, and Vaghsheer demonstrates India's unparalleled progress in defense self-reliance and indigenous shipbuilding. The vessels have undergone rigorous trials, including machinery, hull, fire-fighting, and damage control assessments, as well as proving all navigation and communication systems at sea, making them fully operational and ready for deployment.

This historic occasion not only enhances the Navy's maritime strength but also symbolizes the nation's remarkable achievements in defense manufacturing and self-reliance. It is a proud moment for the Indian Navy and the nation as a whole, further reinforcing India's commitment to building a robust and self-sufficient defense ecosystem.

https://pib.gov.in/PressReleasePage.aspx?PRID=2089205

Press Information Bureau
Government of India

Ministry of Defence

Wed, 01 Jan 2025

Air Marshal Jeetendra Mishra Assumes Command Of IAF's Western Air Command

Air Marshal Jeetendra Mishra assumed command of the Indian Air Force's Western Air Command on 01 January 2025.

The Air Marshal was commissioned into the Indian Air Force as a fighter pilot on 06 December 1986. He is an alumnus of National Defence Academy Pune, Air Force Test Pilots School, Bangalore, Air Command and Staff College, USA and Royal College of Defence Studies, UK. A Fighter Combat Leader and an experimental Test Pilot, Air Marshal Mishra has more than 3000 hours of flying experience.

In his service career spanning over 38 years, the Air Marshal has tenanted important command and staff appointments. These include Commanding Officer of a Fighter Squadron, Chief Test Pilot at Aircraft & Systems Testing Establishment (ASTE), Air Officer Commanding of two frontline air bases, Director (Operational Planning and Assessment Group), Principal Director (ASR) and Asst Chief of Air Staff (Projects) at Air HQ (VB), Commandant ASTE and Deputy Chief of Integrated Defence Staff (Doctrine, Organisation and Training). He was Deputy Chief of Integrated Defence Staff (Operations) prior to taking over his present appointment.

The Air Officer is a recipient of ‘Ati Vishisht Seva Medal’ and ‘Vishisht Seva Medal’. Air Marshal Jeetendra Mishra succeeds Air Marshal Pankaj Mohan Sinha who superannuated on 31 December 2024 after putting in more than 39 years of distinguished service in the IAF.

https://pib.gov.in/PressReleasePage.aspx?PRID=2089242

THE ECONOMIC TIMES

Wed, 01 Jan 2025

Defence Ministry has a bold vision for 2025: What the ‘Year of Reforms’ will bring for the Indian armed forces

India’s Ministry of Defence has declared 2025 as the “Year of Reforms,” a strategic move aimed at modernising the country’s armed forces to prepare them for future challenges. This initiative will focus on enhancing joint operations between the Army, Navy, and Air Force, promoting the integration of new technologies, and improving the overall combat readiness of the military. The reforms will focus on areas such as cyber and space, emerging technologies like artificial intelligence (AI), machine learning, robotics, and hypersonics, and the development of Integrated Theatre Commands.

Strengthening Defence Preparedness for Future Warfare

Defence Minister Rajnath Singh, who chaired the meeting that led to the announcement, emphasised that the “Year of Reforms” would be a landmark step in the modernisation journey of the Indian Armed Forces. He stated, “It will lay the foundation for unprecedented advancements in the country’s defence preparedness, thus preparing to ensure the security and sovereignty of the nation amidst the challenges of the 21st century.”

Singh highlighted that the reforms would aim to bolster the military’s capabilities, making it a technologically advanced and combat-ready force capable of multi-domain integrated operations.

Core Areas of Reform for 2025A range of reforms has been outlined for 2025, which will transform the armed forces into a force that is both efficient and highly advanced.

Some of the key focus areas include:

Integrated Theatre Commands: The creation of Integrated Theatre Commands will be a significant step towards greater integration and jointness between the three armed services. This will facilitate better coordination and operational efficiency, allowing the forces to respond effectively to emerging security challenges.

Emerging Technologies: The Ministry has identified emerging technologies like artificial intelligence, machine learning, hypersonics, and robotics as crucial to modernising the armed forces. These technologies will help in the development of new tactics, techniques, and procedures (TTPs) that are required to win future wars, particularly in the cyber and space domains.

Inter-Service Cooperation: The reforms will focus on fostering inter-service cooperation through shared operational requirements and joint operational training. This will ensure that the armed forces are prepared to conduct integrated operations across various domains.

Simplifying Acquisition Procedures: To accelerate the development of military capabilities, the acquisition procedures will be streamlined and made more time-sensitive. This will allow the armed forces to swiftly acquire new technologies and equipment, enhancing their overall readiness.

Public-Private Partnerships: The government will work to improve ease of doing business and facilitate technology transfer and knowledge sharing between the defence sector and the civil industry. The goal is to promote public-private partnerships that foster innovation and accelerate the modernisation process.

Defence Exports and Research: India aims to position itself as a credible exporter of defence products by enhancing research and development (R&D) and encouraging partnerships between Indian industries and foreign Original Equipment Manufacturers (OEMs). This will allow for better resource integration and technological advancements.

Veteran Welfare: The welfare of veterans will also be a key priority. Efforts will be made to optimise welfare measures and leverage veterans' expertise to contribute to ongoing reforms and innovation in the defence sector.

Cultural Pride and Indigenous Capabilities: The Ministry intends to instil a sense of pride in Indian culture and ideas, ensuring that the armed forces not only adopt global standards but also

develop indigenous capabilities suited to India's unique needs. The focus will be on incorporating best practices from modern militaries that align with India's specific conditions.

Defence Ministry's Meeting and Decision for Reform

The decision to mark 2025 as the "Year of Reforms" was made during a high-level meeting chaired by Defence Minister Rajnath Singh on the eve of the New Year. The meeting was attended by all the secretaries of the Ministry of Defence (MoD), who reviewed the progress of various schemes, projects, and reforms. The discussions focused on the way forward to give a significant push to the ongoing and future reforms aimed at transforming the armed forces into a modern, technology-driven force.

Rajnath Singh expressed confidence that the reforms would significantly enhance the country's defence preparedness. He said, "The 'Year of Reforms' will be a momentous step in the modernisation journey of the armed forces."

The Road Ahead for India's Defence Modernisation

As 2025 approaches, the Indian Ministry of Defence aims to build a more capable, technologically advanced, and integrated military force. By focusing on emerging technologies, enhancing joint operational capabilities, and promoting collaborations within the defence ecosystem, India is preparing its armed forces to effectively counter 21st-century threats. The country also plans to foster greater collaboration between the civil and defence sectors, positioning India as a key player in the global defence industry.

https://economictimes.indiatimes.com/news/defence/defence-ministry-has-a-bold-vision-for-2025-what-the-year-of-reforms-will-bring-for-the-indian-armed-forces/articleshow/116850858.cms

THE ECONOMIC TIMES

Thu, 02 Jan 2025

Bangladesh Army chief bats for balance in ties with India

Bangladesh's Chief of Army Staff, General Waker-Uz-Zaman, emphasised the importance of maintaining balanced and equitable relations with India, calling it an "important neighbour" in an interview with Bangladesh's highest circulated daily Prothom Alo.

He spoke about interdependence. "India is an important neighbour. We are dependent on India in many ways, and India benefits from us too. A large number of Indians are working here, both formally and informally. Many Bangladeshis visit India for medical treatment, and we import significant quantities of goods from them," General Zaman stated, underscoring the reciprocal nature of the relationship.

He noted that such a "give-and-take relationship" must be built on fairness. "While it is natural for countries to seek benefits, any perception of dominance undermines the partnership. Our relations should ensure equality, avoiding any impression that one side is imposing on the other's interests."

General Zaman assured that Bangladesh remains committed to safeguarding India's strategic interests while expecting the same from its neighbour.

"Both nations must equally prioritise and respect each other's interests," he affirmed. The Bangladesh Army Chief reiterated that maintaining good relations with India is vital for mutual progress, stability, and regional harmony. Appointed by the then PM Sheikh Hasina last year, General Zaman, also her relative, ensured that Hasina gets a safe passage to India on August 5.

https://economictimes.indiatimes.com/news/defence/bangladesh-army-chief-bats-for-balance-in-ties-with-india/articleshow/116863205.cms

THE ECONOMIC TIMES

Thu, 02 Jan 2025

Rajnath Singh readies plan to streamline procurement, promote partnerships

At a meeting chaired by defence minister Rajnath Singh, 2025 has been declared as the year of reforms with several initiatives set to be rolled out in the coming months. Officials said that among the areas that have been identified for focused intervention is the acquisition procedure, which has often been marred by delays and time overruns.

"Acquisition procedures need to be made simpler and time-sensitive to facilitate swifter and robust capability development," they said. Sources added among the new initiatives being placed is an accelerated procurement procedure that will be on the lines of emergency procurements done by the services over the past four years. Such a procedure will drastically cut down selection time as well as delivery of weapons systems to the armed forces.

Another focus area is going to be improving ease of doing business, with the ministry looking to promote technology transfer and public-private partnerships in the defence sector. It is known that public sector entities have a lot of manufacturing infrastructure and expertise but have been unable to fully absorb technology due to constraints like hiring and rewards policies. The government is likely to encourage public sector units to enter into partnerships with the private sector.

Officials said that the idea is to position India as a credible exporter of defence products and focus on research and development partnerships between domestic companies and foreign original equipment manufacturers. For example, the partnership between Tata and Airbus to manufacture C295 transport aircraft in India is expected to bring in key aviation technologies to the private sector.

The reforms will also focus on collaboration across various stakeholders and effective civil-military coordination to eliminate inefficiencies. Besides, they will promote jointness by facilitating establishment of integrated theatre commands. Some domains that have been chosen

for particular focus are cyber and space, emerging technologies like artificial intelligence, machine learning, hypersonics and robotics.

https://economictimes.indiatimes.com/news/defence/rajnath-singh-readies-plan-to-streamline-procurement-promote-partnerships/articleshow/116863135.cms

THE ECONOMIC TIMES

Thu, 02 Jan 2025

India working on plan to counter Pakistan challenge in UN Security Council

When UN Security Council (UNSC) meetings kick off this month, India will be looking to tackle any move by Pakistan to internationalise the Kashmir issue with support from old allies and some UNSC members which are from Europe, ET has learnt.

Pakistan, as the non-permanent member of the UNSC for 2025-26 beginning Wednesday, is expected to internationalise the Kashmir issue and bring other differences with India in the Council meetings, including matters pertaining to sanctions of international terrorists, according to sources.

New Delhi is banking on support from permanent council members Russia, France and the US to blunt Pakistan's efforts in this regard, the sources told ET, adding that India has been in touch with some permanent members of UNSC over the issues that may be debated over the next two years, beginning January 1.

However, all eyes will be on the role of China - Pakistan's all-weather friend - at the UNSC. Amid thaw in ties with Beijing since the Kazan Summit, China may take a balanced approach, according to the sources. India also plans to coordinate with other non-permanent members of UNSC, including old African partner Algeria, besides Greece, Denmark and Slovenia, which are non-permanent members in the Security Council.

https://economictimes.indiatimes.com/news/defence/india-working-on-plan-to-counter-pakistan-challenge-in-un-security-council/articleshow/116863013.cms

THE ECONOMIC TIMES

Wed, 01 Jan 2025

India, Pakistan exchange list of nuclear installations

India and Pakistan on Wednesday exchanged a list of their nuclear installations under a bilateral pact that prohibits the two sides from attacking each other's atomic facilities, in continuation of an over-three-decade practice. The exchange of the list took place under the provisions of an

agreement on the prohibition of attack against nuclear installations and facilities, the Ministry of External Affairs (MEA) said.

It was done simultaneously through diplomatic channels in New Delhi and Islamabad.

"India and Pakistan today exchanged, through diplomatic channels, simultaneously at New Delhi and Islamabad, the list of nuclear installations and facilities covered under the agreement on the prohibition of attack against nuclear installations and facilities," the MEA said.

The exchange of the list came amid frosty ties between the two countries over the Kashmir issue as well as cross-border terrorism.

The agreement was signed on December 31, 1988 and entered into force on January 27, 1991.

The pact mandates the two countries to inform each other of the nuclear installations and facilities to be covered under the agreement on January 1 of every calendar year.

"This is the 34th consecutive exchange of such lists between the two countries, the first one having taken place on January 1, 1992," the MEA said in a statement.

https://economictimes.indiatimes.com/news/defence/india-pakistan-exchange-list-of-nuclear-installations/articleshow/116855938.cms

THE HINDU

Thu, 02 Jan 2025

The race for fighters: the IAF's dilemma

In the last two weeks, taking the world by surprise, China unveiled a series of high technology platforms establishing its technological supremacy. These include two stealth fighter jets, the launch of an amphibious naval ship, a new "comprehensive" scientific research ship for global deep-sea exploration, a supersonic civil jet prototype and a new bullet train dubbed the world's fastest. The timing couldn't have been starker, highlighting the widening technological gap with the Indian Air Force (IAF) which is struggling to maintain its fighter squadron strength as modernisation is plagued by delayed deliveries.

Chinese military modernisationLast week, videos emerged on social media of two stealth fighter jets in tail-less configuration. One of them a massive jet with delta-wing design, featuring three engines hinting at a likely long range, flying over Chengdu in Sichuan province went viral on social media 'X'. Videos of the second smaller jet featuring a smaller twin-engine design with swept wings emerged a day later. Reports suggest that the larger jet was designed by Chengdu Aircraft Corporation while the smaller jet is from the rival Shenyang Aircraft Corporation. However, there has been no official comments from China or from their state media so far on the developments.

The People's Liberation Army Air Force (PLAAF) of China has already fielded two fifth generation fighter jets, the medium J-35 and the heavy J-20, becoming the only country other than

the U.S. to have more than one fifth gen fighter. With the two new jets, dubbed by many commentators as sixth gen-fighters which is debatable, China has, undoubtedly, taken giant strides in the race. The recently released report to the U.S. Congress on the military and security developments involving the PRC for 2024 noted that the PLAAF and PLAN (Navy) Aviation together constitute the largest aviation force in the Indo-Pacific region.

“The PLAAF is rapidly approaching technology typical of U.S. standards,” it noted.

The PLAAF and PLAN Aviation continue to field greater numbers of fourth-generation aircraft (now more than 1,300 of 1,900 total fighters, not including trainers) and probably will become a majority fourth-generation force in the next several years, the report added. In addition, the J-35 and J-20 are being added at a phenomenal rate and flight testing of the latest jets indicate a fairly advanced state, and that they have been under development for sometime.

The IAF’s modernisation planThe IAF is at 31 fighter squadrons as against the sanctioned strength of 42 squadrons, desperately awaiting new inductions and with no fifth gen fighter in the line-up for at least a decade, the only outlier among major countries.

Recent reports state that Pakistan has approved the procurement of 40 J-35s from China.In an uncanny coincidence, very recently the Defence Ministry has appointed a committee led by the Defence Secretary to look into the overall capability development of the IAF. India has an ambitious plan lined up for the acquisition of over 500 fighter jets, a bulk of them to be indigenously designed and manufactured, majority of them for the IAF.

However, these are at various stages of development and manufacturing and their timely deliveries are critical. Of these, the LCA variants will constitute the bulk. There are 83 LCA-Mk1As on order but their deliveries have been delayed as the F-404 engines by General Electric (GE) have been delayed. A deal for 97 additional Mk1As is under discussion. The LCA-Mk2, fifth generation fighter the Advanced Medium Combat Aircraft (AMCA) and the Twin Engine Deck Based Fighter (TED-BF) for the Navy all have very ambitious development timelines but given the complexity and track record, it has to be seen how soon they are ready and available for induction.

The Defence Research and Development Organisation (DRDO) is working on the indigenous development of LCA-Mk2 aircraft and the AMCA, the Defence Ministry informed the Parliamentary standing committee on defence as per a report tabled earlier this month. “The deliveries for LCA-Mk2 and AMCA are expected to commence only into the next decade once the development cycle is successfully completed.”

It must be noted that of the current 31 squadrons, the phase out of two MIG-21 squadrons has been extended due to the delayed deliveries of LCA-Mk1A. The Jaguars, Mirage-2000s and MIG-29s will begin going out by the end of the decade. For instance, by 2027-28, the first of the MIG-29s, inducted in the late 1980s, will start going out and by early 2040s, when most of these types will be phased out, some of the early lot of SU-30s will also start going out. The IAF has in all contracted 272 Su-30s, and a deal to procure 12 additional Su-30MKIs to replace the ones lost in accidents has just been signed while a major Sukhoi upgrade programme is in the final stages of approval.Another critical procurement programme that hasn’t progressed for several years is the 114 Multi-Role Fighter Aircraft (MRFA), a foreign jet intended to be manufactured in India with

significant technology transfer. The Request For Information (RFI) for 114 MRFA was issued in April 2019 to global aircraft manufacturers but has since made no progress with even the preliminary Acceptance of Necessity (AoN) from the Government yet to be received. Given the long timelines for the procurement process, and factoring in the time to set up facilities in India and for the jets to roll out, the MRFA is unlikely to be available in significant numbers till the middle of the next decade.

As reported by The Hindu recently, in the backdrop of the controversy in the procurement of 36 Rafale fighter jets, the government is looking at a procurement model that is transparent and non-controversial for the MRFA.Underscoring this urgency, IAF Air Chief Marshal A. P. Singh said in October that the MRFA was “needed as of yesterday”. The larger and more capable LCA-MK2 is under development and is supposed to do its first flight this October, with December 2027 to be the end of research and development for LCA-Mk2.

“If these timelines are met and the MRFA is signed parallelly we are OK. We are not badly off. But if these timelines are pushed, then we need to look at alternatives,” the Air Chief had stated.

In October 2022, then IAF chief ACM V. R. Chaudhari conceded that even with the LCA-Mk1A, LCA-Mk2 and the MRFA “we will still be at 35-36 (squadrons) by middle of next decade.”

It is pertinent to note that, barring the AMCA which will take sometime the LCA variants and the MRFA are all four gen plus fighters.On the delay in the LCA-MK1A, a representative of the Ministry informed the House Panel that it “worries all of us”.

“LCA Mark 1 is dependent on GE-404 engines. The supply of GE-404 engines has been adjusted by GE for the last two years. Due to COVID, their supply chain has broken down. They have not been able to resume yet. They have promised that they will start giving GE engines from March this year, next year onwards, the supply would get stabilised,” the representative submitted.

As soon as the engine problem is sorted out, we have planned to make 24 LCAs every year and then 30 every year, the representative stated. On the agreement between Hindustan A***Thu, 02 Jan 2025***eronautics Limited (HAL) and GE for the licence manufacture of the F-414 engines in India the Ministry representative expressed confidence that it should get it signed in the “next three to four months.”

Aero-engine troublesAn aero-engine is likely to remain the single major dependency and the country’s Achilles heel for a very long time. Imported engines, directly or ‘co-manufactured’ will power all indigenous jets and helicopters till the end of this century at the current rate. The license manufacturing for the F-414 engine or the new 110KN engine likely to be co-developed and co-produced with France for the AMCA-Mk2 will still mean that India would be dependent on them for the most critical parts.

It will essentially be between France and the U.S. — U.S. for a part of the fighter fleet and France for the reminder of the fighter fleet and for almost all of the helicopter segment as more indigenous platforms come in.The country can’t claim to be fully self-reliant till it can field an aero-engine that is completely designed and developed in-house.

https://www.thehindu.com/news/national/the-race-for-fighters-the-iafs-dilemma/article69049922.ece

The EurAsian Times

Thu, 02 Jan 2025

1st European Country To Deploy Chinese AD System; PLA's HQ-22 Variant Deployed At NATO's Doorstep

Serbia's Ministry of Defense has announced that the country's airspace control and protection capabilities have been "significantly improved" with the integration of the Chinese FK-3 air defense missile system.

This advanced system, which is an export variant of China's HQ-22 surface-to-air missile system, is a major upgrade for the Republic of Serbia's Air Force and Air Defense. In a press release published on December 30, the Ministry said that the FK-3 air defense system provides advanced protection for Serbia's skies.

The system includes a command center vehicle, missile launchers, radar systems, and logistics support vehicles, creating a comprehensive air defense network. It is designed for high mobility, ensuring rapid deployment and flexibility in various operational conditions.

In 2019, Serbia placed an order for the FK-3 system. In 2020, US officials warned Belgrade against purchasing Chinese missile systems, stating that for Serbia to pursue membership in the EU and other Western alliances, it would need to align its military equipment with Western standards.

The delivery of the FK-3 was completed in 2022 through a large-scale airlift operation using Chinese Y-20 transport planes, marking it as the largest shipment of Chinese weapons to Europe.

Following this delivery, Serbia became the first European country to operate the FK-3, a system compared to the American Patriot and Russian S-300 missile systems, although it has a shorter range than the latest versions of the S-300.

The Serbian Ministry of Defense reported that training exercises for the FK-3 system are conducted daily as part of ongoing operational readiness. The 250th Air Defence Missile Brigade's battalion, equipped with FK-3 missiles, undergoes continuous monitoring and performance evaluations to ensure peak operational effectiveness. These efforts are focused on defending critical infrastructure, military personnel, and territory from aerial threats. Captain 1st Class Stefan Manić, the missile battery commander, said, "The FK-3 is a milestone in air defense systems."

He highlighted the system's anti-jamming technology, which protects its radars from missile attacks aimed at destroying tracking systems. Furthermore, the FK-3 can engage up to six air targets simultaneously with 12 missiles, showcasing its firepower and tactical advantage over traditional systems.

The missile battery commander stressed, "It is a great honor to be the commander of an air defense missile battery and to work on the most powerful air defense missile system that our country has."

In preparation for its deployment, Serbian crews received “very complex” training in China, where they learned to operate and maintain the FK-3 system. Captain Manić added that despite the complexity of the training, the Serbian personnel completed it with high motivation and are now fully equipped to manage the missile system independently.

FK-3 Surface-Air-To-Air Missile System

The FK-3 is engineered to target a variety of airborne threats, such as aircraft, helicopters, and cruise missiles. The Serbian Ministry of Defense highlighted that with an operational range of 100 kilometers and a maximum altitude of 27 kilometers, the FK-3 system provides robust protection for government buildings, military forces, and the country’s airspace sovereignty.

According to the US-based Think tank, similar to the HQ-22, the FK-3 is said to reach a top speed of Mach 6, although its maximum range is shorter than the HQ-22. Both the FK-3 and HQ-22 systems typically include a radar vehicle and three launch vehicles, each capable of carrying four interceptor missiles.

Additionally, the FK-3 is designed to resist electronic countermeasures and function effectively in high-jamming environments. The system relies on 8×8 vehicles, each transporting four vertically launched missiles.

Chinese experts said the FK-3 utilizes angled launching ramps rather than a vertical launch system. While vertical launching offers more flexibility, it limits range as the missiles must use their own fuel to adjust direction.

The angled ramps assist in the missile direction, extending their range. Furthermore, the structure of angled ramps is simpler and lighter than vertical systems, which makes the overall system more cost-effective.

China asserts that the FK-3 is the world’s only air defense missile to feature a dual-mode guidance system, combining command plus semi-active radar homing guidance with full-course command guidance.This technology allows the FK-3 to deliver high accuracy at both long and short ranges while being highly resistant to interference.

After the FK-3 system was delivered in 2022, Chinese experts suggested that certain Western nations had initiated a smear campaign against Serbia, driven by concerns over the possible deployment of a Chinese-made air defense system in Europe. These countries feared that the FK-3’s advanced phased array radar could detect all NATO aircraft activities near Serbia.

https://www.eurasiantimes.com/1st-european-country-to-deploy-chinese/

Press Information Bureau
Government of India

Ministry of Science & Technology

Wed, 01 Jan 2025

2025 will witness India assuming critical role in Global Biotechnology revolution; India's 1st Biotechnology policy- BIO-E3 brought by Modi Govt 3.0 has already paved the way for it, says Science Minister Dr. Jitendra Singh

Department of Biotechnology has ushered India to become a leader in Preventive Healthcare

India's bio economy has experienced remarkable growth, skyrocketing from $10 billion in 2014 to over $130 billion in 2024, with projections to reach $300 billion by 2030

On the first day of the New Year today, Union Minister Dr. Jitendra Singh, Minister of State (Independent Charge) for Science and Technology, Earth Sciences (Independent Charge), MoS PMO, DoPT Personnel, Public Grievances and Pensions, Atomic Energy, Space, gave an exclusive interview to Doordarshan News, in which he exuded confidence that the year 2025 will witness India assuming critical role in Global Biotechnology revolution and that India's 1st Biotechnology policy- BIO-E3 brought by Modi Govt 3.0 has already paved the way for it.

The Minister highlighted India's significant strides in biotechnology and the nation's growing global leadership in Biotechnology.

Reflecting on the past decade of progress under the leadership of Prime Minister Narendra Modi, Dr. Jitendra Singh emphasized the pivotal role of biotechnology in India's future, particularly as the country continues to embrace innovation, technology-based interventions, and startups. "Prime Minister Modi's vision has consistently prioritized innovation and technological advancement, driving India's evolution into a global biotechnology powerhouse," said Dr. Singh. He added that biotechnology is poised to be at the forefront of the Fourth Industrial Revolution, with India playing a central role.

Dr. Jitendra Singh highlighted the newly launched BIO-E3 (Biotechnology for Economy, Employment, and Environment) Policy, which was recently approved by the Union Cabinet under Prime Minister Modi's leadership. This forward-thinking policy marks a significant milestone for

India’s biotechnology sector, reinforcing its potential to shape the country’s economy, employment landscape, and environmental sustainability in the years to come.

India’s biotechnology sector has experienced extraordinary growth, skyrocketing from a $10 billion industry in 2014 to over $130 billion in 2024, with projections to reach $300 billion by 2030. As Dr. Jitendra Singh pointed out, “India is not only a leader in biotechnology but is now at the center of a global biotech boom, which will foster innovation, create jobs, and strengthen environmental commitments.”

The Minister also underscored the fact that India currently accounts for 60% of global vaccine production and is home to the second-largest number of USFDA-approved manufacturing plants outside the United States. With growing investment opportunities across sectors such as Bio-Pharma, Bio-Agri, Bio-Industrial, Bio-Energy, Bio-Services, and Med-Tech, India is emerging as a global leader in biotechnology.

Dr. Jitendra Singh further compared the ongoing “Bio-revolution” in India to the IT revolution driven by the West, highlighting that the country’s rich natural and biodiversity resources are key to its biotechnology success. He also praised the efforts of Indian startups leveraging biotechnology to create innovative solutions such as non-human milk and other sustainable products.

The Union Minister recalled the launch of the Mission Suraksha initiative, which led to the development of indigenous DNA-based vaccines and the world’s largest vaccination drive during the COVID-19 pandemic. In 2024, India’s biotechnology sector has also seen notable achievements, such as the development of the world’s first HPV vaccine and the breakthrough creation of the indigenous antibiotic ‘Nafithromycin,’ which has proven effective in treating respiratory diseases. Furthermore, the Department of Biotechnology has successfully developed a gene therapy experiment for Haemophilia.

Dr. Jitendra Singh also commended the collaboration between 14 institutes that had previously operated in silos, emphasizing the importance of a “whole of Science, whole of Government, and whole of Nation” approach. He highlighted ongoing initiatives such as the Deep Sea Mission, which Prime Minister Modi has referenced on multiple occasions, and the Anusandhan National Research Foundation (NRF), which was passed in 2024 and is set to foster innovation with a 60% contribution from the private sector. In 2024, the Indian government has already sanctioned 1000 crores to further accelerate innovation in biotechnology.

Additionally, Dr. Jitendra Singh noted that India’s leadership extends beyond biotechnology to other cutting-edge fields, such as quantum technology, where India has emerged as a global leader. He also celebrated the significant progress made in space exploration, revealing that an Indian-origin individual will soon be sent to the US Space Station, as part of a broader effort to position India at the forefront of space technology.

As Dr. Jitendra Singh concluded, “In the past, India would often take cues from other countries in terms of technology and innovation. Today, times have changed. Other countries are now looking to India for guidance and inspiration. India is proud to be leading the way, particularly in areas

such as quantum technology, where the country is making significant strides with the Quantum Mission."

India's remarkable advancements in biotechnology and other emerging technologies position it as a key player on the global stage, driving the future of innovation, sustainability, and economic growth.

https://pib.gov.in/PressReleasePage.aspx?PRID=2089222

THE ECONOMIC TIMES

Wed, 01 Jan 2025

ISRO's historic Space Docking Experiment, set for January 7, explained

Isro is set to achieve a significant milestone in space technology with the upcoming Space Docking Experiment (SpaDeX) mission, scheduled for January 7, 2025. The mission will involve two satellites performing a complex orbital dance before attempting a docking maneouver, a vital step for future space operations, including India's planned Bharati Antriksh Station.

How the docking will unfold

The mission will begin with a small velocity difference between the two satellites. At a rate of 10 meters per second, this will cause them to drift apart, with the separation expected to reach approximately 20 kilometers by December 31, 2024. Once the distance is established, Isro will begin to carefully control their relative positions.

"We'll start using the onboard propulsion systems on one of the two satellites to arrest the drift so that we maintain the 20km distance between the two satellites," explained M Sankaran, Director at the UR Rao Satellite Centre (URSC).

The satellites will remain in the same orbit and travel at the same speed, resembling twins. Following a four-day waiting period to achieve optimal solar orientation, the inter-satellite distance will gradually decrease. "We'll reduce the 20km gap to 5km, then to 1.5km," said Sankaran. Once the satellites are within 5 kilometers of each other, an inter-satellite radio frequency (RF) link will be activated to allow communication between the two, enabling real-time data exchange of position and attitude for the docking process.

New tech for docking sequence

Isro has developed several new sensors at its Laboratory for Electro Optics Systems (LEOS) in Bengaluru, which will play a key role in guiding the docking. Once the satellites are within 1.5 kilometers, the docking will commence, relying on three different guidance algorithms.

The docking mechanism will involve a "hugging" action, where the chaser satellite will move toward the target satellite at a controlled speed of 10mm/s. Once in close proximity, the latches and

clamps on both satellites will secure them together. “The ring extended on the chaser satellite will retract, pulling the target satellite towards it, and the two will merge into one unit,” Sankaran added.

Power transfer, future prospects

Once docked, the satellites will demonstrate power transfer capabilities, with electricity flowing from one satellite to the other, powering a heater and confirming a successful docking. The combined unit will then be controlled by a single satellite’s control system, showcasing technology essential for future space station operations.

The SpaDeX mission represents a culmination of years of work, beginning as a conceptual experiment in 1989. Sankaran noted, “When the project was approved in 2016, we were able to realize it over several years.” Extensive testing and preparation have gone into the mission, with several testbeds developed to validate the docking mechanism, sensors, and overall sequence.

A milestone for India's space capabilities

The successful completion of SpaDeX will be a significant milestone for India’s space program, especially in developing technologies required for satellite servicing and space station operations. The ability to dock spacecraft in orbit is a capability only a few spacefaring nations possess, and India is on the verge of joining this elite group.

If successful, SpaDeX will pave the way for future missions that could involve satellite repairs, space station assembly, and more, strengthening India’s position in the global space race.

https://economictimes.indiatimes.com/news/science/isros-historic-space-docking-experiment-set-for-january-7-explained/articleshow/116855353.cms

Hindustan Times

Thu, 02 Jan 2025

Centre launches One Nation One Subscription to facilitate access to research articles

The Union education ministry on Wednesday launched the One Nation One Subscription (ONOS) scheme to facilitate free access to most high-end academic journals and articles published globally to students in various government-funded higher educational institutions, including IITs, across the country.

The scheme will benefit around 18 million students, faculty, and researchers across disciplines such as STEM (science, technology, engineering, mathematics), medicine, social sciences, finance and accounts, etc, the ministry said in a statement after the ONOS launch. The scheme, which was approved by the Union Cabinet on November 25 last year, aims at improving research and development (R&D) ecosystem in the country.

“This call for a vibrant R&D ecosystem resonated with the goals outlined in the National Education Policy (NEP) 2020, which identifies research as a fundamental driver of educational excellence and national progress. The policy seeks to cultivate a robust research culture that not only enhances academic quality but also accelerates India’s growth on the global stage…” the statement read.

The scheme will provide inclusive access to research for institutions in tier 2 and tier 3 cities, ensuring equitable access to knowledge. At least 13,400 international journals covering STEM, medicine, management, social sciences and humanities would be made available to researchers under the first phase of the ONOS initiative.

Under the initiative, 451 state public universities, 4,864 colleges and 172 institutes of national importance will be among the 6,380 higher education and research institutions that will have access to top journals published by 30 publishers, including Elsevier, Springer Nature, and Wiley, it added.

The ministry further said that the entire subscription process will be centrally coordinated by INFLIBNET (Information and Library Network), an autonomous inter-university centre under the University Grants Commission (UGC), which will manage the distribution of digital access to these journals, ensuring a seamless experience for users.

Journals will be accessible entirely through a digital platform, ensuring convenience and ease for all users. This approach minimises administrative complexities and makes access available on-demand.

“A total of ₹6,000 crore has been allocated for the scheme, covering three years—2025, 2026, and 2027. The funding will cover the subscription charges for all participating institutions across the three-year period. Further, ONOS will also provide central funding support of ₹150 crore per year for beneficiary authors to publish in selected good quality Open Access (OA) journals,” the statement read.

The phase I, which started on Wednesday, will provide access to over 13,000 journals for at least 6,300 government academic and R&D institutes including central and state-government universities and colleges. The ministry said the experience of ONOS phase I will be used for designing subsequent phases of the scheme.

The scheme is the first step in a multi-pronged approach. “It expands access through the widely used subscription model. The other steps focus initially on promoting Indian journals and repositories and then introducing new research evaluation methods that consider both journal metrics and factors like innovation and entrepreneurship,” the statement read.

https://www.hindustantimes.com/india-news/centre-launches-one-nation-one-subscription-to-facilitate-access-to-research-articles-101735757179174.html

DECCAN HERALD

Wed, 01 Jan 2024

Mumbai-based start-up Manastu tests its green propulsion system in space

Mumbai-based space start-up Manastu Space on Wednesday said it had successfully test-fired its home-built thruster – Vyom 2U – onboard the PSLV Orbital Experimental Module-4 (POEM), tiling the platform by 24 degrees and imparting angular velocity before the onboard systems regained control. The POEM-4 platform, comprising the fourth stage of the PSLV-C60 rocket that launched the SpaDeX satellites on Monday, has been placed in an orbit at an altitude of 350 kms where several ISRO labs, start-ups and educational institutions will carry out in-orbit experiments.

"We test-fired our green propulsion system Vyom-2U onboard the POEM-4 on the New Year's eve," Manastu Space founder and CEO Tushar Jadhav told PTI.

He said the 30-second firing of the thruster tilted the PSLV POEM-4 platform by 24 degrees, imparting an angular velocity of 0.5 deg per second before onboard systems seamlessly regained control.

"Over the coming days, PSLV will perform multiple critical maneuvers, culminating in 500+ seconds of cumulative in-space firing time, cementing the success of this In-Orbit Demonstration (IOD) of Manastu Space's Green Propulsion system VYOM 2U based on MS289 green propellant," the start-up said in a LinkedIn post. The thrusters use MS289 propellant, which is a blend of hydrogen peroxide and replaces the hydrazine-based carcinogenic propellants used by satellites till now.

"We are deeply grateful to ISRO - Indian Space Research Organization - and IN-SPACe for providing an incredible platform like POEM to test our product and many others…," the start-up said.

Demonstration of seed germination in outer space, a robotic arm to catch a tethered debris there, and testing of green propulsion systems are some of the experiments planned on the POEM-4.The POEM is carrying 24 experiments -- 14 from various ISRO labs and 10 from private universities and start-ups -- to demonstrate various technologies in space.

"The PSLV Orbital Experiment Module (POEM) is a practical solution deployed by ISRO that allows the Indian start-ups, academic institutions and research organizations to test their space technologies without the need to launch entire satellites. By making this platform accessible, we are reducing entry barriers and enabling a wider range of entities to contribute to the space sector," Pawan Kumar Goenka, Chairman, Indian National Space Promotion and Authorization Centre (IN-SPACe), said in a statement.

https://www.deccanherald.com/science/mumbai-based-start-up-manastu-tests-its-green-propulsion-system-in-space-3338184