

नवंबर

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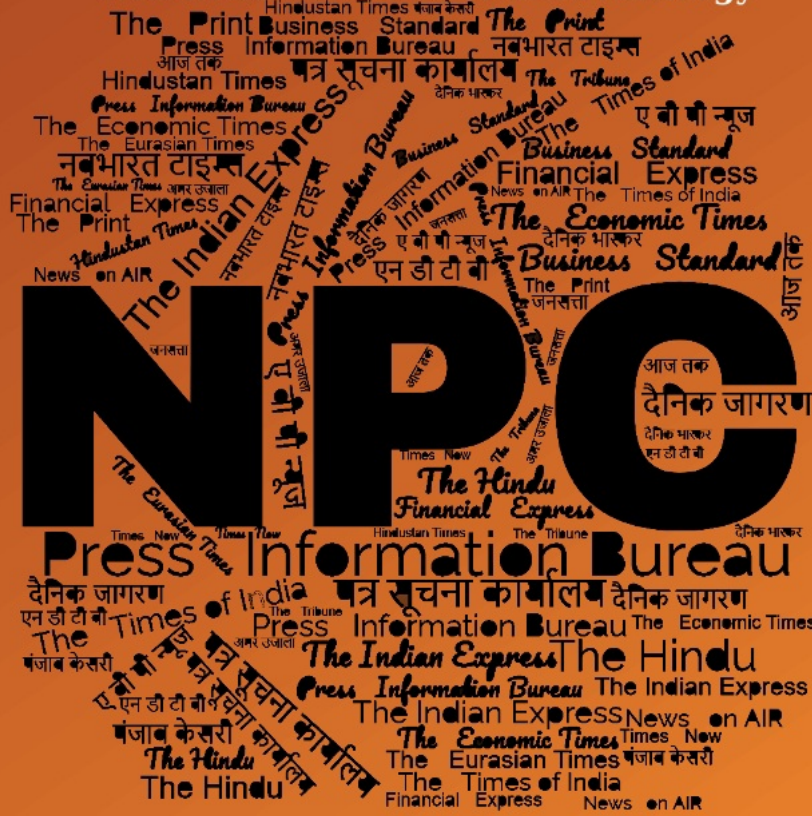
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समाचार पत्रों के चयनित अंश Newspapers Clippings

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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अमरउजाला

Sun, 10 Nov 2024

Ballistic Missile: डीआरडीओ जल्द करेगा एंटी-शिप बैलिस्टिक मिसाइल का परीक्षण, 1000 किमी होगी मारक क्षमता

भारत जल्द ही एक नई लंबी दूरी की एंटी-शिप बैलिस्टिक मिसाइल का परीक्षण करने की तैयारी कर रहा है। जो 1,000 किलोमीटर से अधिक दूरी तक युद्धपोतों या विमान वाहकों को मार गिराने में सक्षम होगी। रक्षा सूत्रों ने बताया कि रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) द्वारा अगले कुछ दिनों में इस बैलिस्टिक मिसाइल का परीक्षण किए जाने की उम्मीद है।

सूत्रों ने बताया कि एंटी-शिप बैलिस्टिक मिसाइल को युद्धपोतों और जमीन दोनों से प्रक्षेपित किया जा सकेगा। यह मिसाइल प्रणाली भारतीय नौसेना के लिए विकसित की जा रही है और इससे उसे लंबी दूरी से दुश्मन के जहाजों को मार गिराने की क्षमता मिलेगी।

बता दें कि, भारतीय सेना लगातार अपने आयुध भंडार में बैलिस्टिक मिसाइलों की संख्या बढ़ा रही है, भारतीय सेना और भारतीय वायु सेना दोनों ने प्रलय बैलिस्टिक मिसाइलों का ऑर्डर दिया है। तीनों सेनाओं में छोटी और मध्यम दूरी की मिसाइलों को शामिल करने के साथ ही इनकी संख्या भी बढ़ाई जाएगी। जिससे उन्हें लंबे समय तक चलने वाले संघर्षों को झेलने की क्षमता मिलेगी।

हाल के दिनों में हुए युद्धों में बैलिस्टिक मिसाइलों का बड़े पैमाने पर उपयोग किया गया है। पिछले दिनों हमास ने इस्राइल पर रात में जोरदार मिसाइल हमला किया था। जिसमें इस्राइल को काफी नुकसान पहुंचा था। पिछले कुछ सालों में भारतीय सेना का उत्तरी सीमाओं पर चीन के साथ संघर्ष देखने को मिला है। चीन के पास गैर-परमाणु क्षमता वाले लंबी दूरी के हथियारों का विशाल भंडार है।

<https://www.amarujala.com/india-news/drdo-set-to-test-over-1000-km-strike-range-anti-ship-ballistic-missile-2024-11-10>

Bad news for Pakistan, China as India gets ready to test deadly anti-ship missile ‘Pralay’, how powerful it is?

Anti-ship ballistic missiles (ASBMs) are being inducted by countries worldwide to their defence arsenals. According to the reports, India is also preparing to introduce an anti-ship ballistic missile, with the Defence Research and Development Organisation (DRDO) set to begin testing this long-range missile soon. After the successful test, the missile will be capable of targeting moving warships at distances of over 1,000 kilometers.

How Crucial Are These Missiles

The Indian Navy is all set to receive this new and powerful missile soon. These missiles are capable of destroying enemy ships from both ship and land.

The testing is set to take place at a time when India is steadily boosting its military power. The Indian military is increasing the number of its ballistic missiles. Both the Indian Army and the Indian Air Force have placed orders for a ballistic missile called ‘Pralay.’

Notable, there has been an extensive use of ballistic missiles in wars in recent times. On several occasions, even non-governmental groups have been seen firing hundreds of ballistic missiles at enemy targets in a single night.

China is equipped with a vast rocket force and long-range weapons. Keeping all these factors in mind, the Indian Army is strengthening itself to handle all challenges effectively.

Key Features of Anti-ship Missiles:

- An anti-ship ballistic missile is a sophisticated weapon
- These missiles are designed to target ships floating in the sea.
- This missile follows a ballistic trajectory, meaning it flies in a high arc and then descends onto its target.
- It can be launched from a platform deployed on land or at sea.
- After launch, the missile flies on a ballistic path, during which it can even exit the Earth’s atmosphere.
- When the missile reaches near its target, it either strikes directly or detonates. The energy generated by the explosion is powerful enough to inflict serious damage on any ship.

<https://www.india.com/news/india-gets-ready-to-test-deadly-anti-ship-missile-pralay-drdo-china-pakistan-bangladesh-russia-united-states-pm-modi-7384186/>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Nov 2024

HQ IDS Conducts First Annual Niche Technology Nexus Seminar on Quantum and Electronic Warfare

Headquarters Integrated Defence Staff (HQ IDS), in collaboration with the Centre for Joint Warfare Studies, conducted the inaugural Annual Niche Technology Nexus (NTN-2024) Seminar today in New Delhi. The seminar, titled ‘Innovating Tomorrow’s Battlefield with Quantum and Electronic Mastery,’ provided insights into transforming defence operations to enhance Aatmanirbharta, aligning with India’s goal for self-reliance in defence technology.

Chief of Defence Staff General Anil Chauhan delivered a special address. He acknowledged the ongoing National Quantum Mission, which coincides with the centenary of Dr. S.C. Bose, and emphasised the long-term impact of Quantum Technology on future warfare and outcomes for the Armed Forces. “Quantum Technology will impact future wars with far-reaching outcomes for the Armed Forces,” he stated, underscoring its strategic importance for Indian defence, particularly in Quantum key distribution, navigation, and sensing systems.

General Anil Chauhan further stressed the transformative potential of integrating Artificial Intelligence, Machine Learning, and Quantum Technologies into Electronic Warfare (EW) systems, asserting that these advancements will reshape the future of military operations. By investing in research, fostering collaborations, and cultivating a skilled workforce, the Armed Forces, in partnership with the Defence Technology & Production Eco-systems, can secure a leading position globally in Quantum and EW technologies, the CDS said.

The NTN-2024 Seminar served as a collaborative platform for academia, industry experts, research organisations, and the defence sector to explore advancements in these niche fields and their potential implications for national defence. Some critical outcomes of the seminar included recommendations for adopting Quantum Safe Algorithms and key management for secure defence networks, as well as advancements in Quantum RF Sensors, Quantum ISR products, Quantum atomic and optical clocks, Quantum Inertial Navigation Systems, and integrated cognitive EW systems for India’s future Theaterised Armed Forces. These emerging niche technologies in

Quantum and EW are pivotal to modernising military operations, enhancing secure communications, and enabling advanced sensing and computational applications.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2071888>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Nov 2024

CDS Gen Anil Chauhan inaugurates the 2nd Edition of Indian Military Heritage Festival

Chief of Defence Staff General Anil Chauhan inaugurated the 2nd edition of the annual Indian Military Heritage Festival (IMHF) in New Delhi today. The two-day festival being held on November 08-09, 2024 aims to engage global and Indian think tanks, corporations, public and private sector undertakings, non-profits, academicians, and research scholars focusing on India's national security, foreign policy, military history and military heritage.

CDS also launched Project 'Shaurya Gatha', an initiative of the Department of Military Affairs and the USI of India, which aims to conserve and promote India's military heritage through education and tourism.

Gen Chauhan also released prominent publications on military topics including *Because of this: A History of the Indo-Pak Air War December 1971* by Air Marshal Vikram Singh (Retd); *Valour and Honour* – a joint publication of the Indian Army and USI of India; and *War-wounded, Disabled Soldiers, And Cadets* – a joint publication of USI and War Wounded Federation.

Defence Research and Development Organisation (DRDO) arranged a photo exhibition highlighting its journey and achievements in contributing to Atmanirbhar Bharat through innovations in defence research. NCC Cadets from across the Delhi NCR area participated in the event. Informative stalls from the three Services were set up showcasing their roles and the various opportunities available for aspiring youth.

Despite India's long and rich military history and strategic culture, much of the general public remains unaware of the various facets of the nation's military heritage and security concerns. The Indian Military Heritage Festival seeks to bridge this gap in national discourse and the nation's cultural calendar. It aims to enhance understanding of India's military traditions, contemporary security and strategy issues, and efforts to achieve self-reliance in military capability through the Aatmanirbhar Bharat initiatives.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2071836>



**Press Information Bureau
Government of India**

Ministry of Defence

Sat, 09 Nov 2024

Handing Over Two Interceptors To Mozambique At Nacala

As part of its capacity-building engagements with friendly foreign nations of the Indian Ocean Region (IOR), the Government of India gifted two water-jet propelled Fast Interceptor Craft (FIC) to the Government of Mozambique on 08 Nov 24. The FICs were transshipped from India by INS Gharial.

The Handing Over Ceremony was attended by the High Commissioner of India in Mozambique, Shri Robert Shetkintong, India's newly appointed Defence Adviser at Maputo, Colonel Puneet Attri, and the Commanding Officer of INS Gharial, Commander Rajan Chib. The Permanent Secretary of the Ministry of National Defence, Mr Augusto Casimiro Mueio, formally accepted the vessels on behalf of the Government of Mozambique.

These water-jet-propelled boats have a top speed of 45 knots and a range of 200 nautical miles at 12 knots. They can carry a crew of five personnel and are equipped with machine guns and bullet-resistant cabins. The two FICs will significantly aid the Government of Mozambique in its effort to combat maritime terrorism and ongoing insurgency in the Cabo Delgado province. Earlier, to bolster the efforts of the Government of Mozambique for maritime security, the Government of India had gifted two large Interceptor vessels in 2019, followed by two FICs of the same class in Jan 2022.

The Indian Navy has been seen by several nations in the IOR as the preferred partner for maritime security. The Indian Navy has been collaborating with several friendly littorals of the IOR to equip and train their maritime security forces to counter maritime security challenges like piracy, drug and human trafficking, Illegal Unreported and Unregulated (IUU) fishing, maritime terrorism, etc. The Indian Navy has also been the first responder to provide Humanitarian Assistance and Disaster Relief (HADR) support to several nations in the region during natural calamities and other contingencies like the COVID-19 pandemic. In March 2019, Indian Naval Ships Sujata & Shardul and Indian Coast Guard Ship Sarathi were diverted from their deployment to assist Mozambique when Cyclone Idai struck the Sofala province. Over a period of two weeks, the ships rescued more than 200 civilians, provided emergency medical treatment to over 2,300 people and supplied 10 Tonnes of food material by boats and helicopter to flood-affected areas.

In March 2021, during the COVID-19 pandemic, The Government of India donated 100,000 doses and supplied over one million doses of the COVISHIELD vaccine to Mozambique under the COVAX programme.

India has provided training opportunities for the Mozambique Armed Forces in various professional institutions of the Indian Armed Forces. India also gifted an Infantry Weapons Training Simulator to Mozambique in November last year to be installed at the Army Practicing

School Manhica, near Maputo. On-job training on operating and maintaining the Indian-gifted vessels is also provided by the resident Indian Coast Guard Afloat Support Team at Maputo. The Interceptors vessels gifted by India have played a pivotal role since 2019 in anti-insurgency operations, maritime patrol & interdiction, and logistics support missions. In the last two years, Indian Warships have made regular port calls at Maputo, Beira and Nacala. Indian Naval Ships Tir and Sujata participated in the 2nd edition of the India-Mozambique-Tanzania (IMT) Trilateral Exercise at Nacala, held in March 2023. Previously, Indian Naval Ships Sujata, Sunayna and Sumedha undertook Joint EEZ Surveillance missions with the Mozambique Navy to strengthen maritime security in the region and undertake harbour and sea training for Mozambique Navy personnel.

India and Mozambique share a robust strategic partnership that has grown even stronger with each passing year in multiple realms. India is thus fully committed to helping and supporting its maritime neighbours in the Indian Ocean Region in line with the vision of Security and Growth for all in the region (SAGAR) advocated by the Hon'ble Prime Minister Shri Narendra Modi.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2072061>



Press Information Bureau
Government of India

Ministry of Defence

Sat, 09 Nov 2024

Indian Navy Operational Demonstration 2024

The Indian Navy is set to demonstrate its formidable maritime capabilities and operational strength at the 'Operational Demonstration' (Op Demo) scheduled at Blue Flag Beach, Puri, Odisha, on Navy Day (04 Dec) this year. Hon'ble President of India, Smt Droupadi Murmu has kindly consented to be the Chief Guest for the event. This event showcases the Navy's multifaceted competencies, enhances maritime awareness among citizens and honours India's rich seafaring heritage.

The 2024 Op Demo to be held against the backdrop of the pristine Blue Flag Beach, symbolises the connection between the Indian Navy and the maritime legacy of the State of Odisha.

The Indian Navy is working closely with the Odisha State Government and local authorities to ensure the smooth execution of the event. Seating arrangements would be made to accommodate local spectators and tourists, offering everyone a chance to witness the live demonstration from the beach. The event will also be broadcast live on National television and streamed via the Indian Navy's YouTube channel to reach a wider audience.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2072030>



**Press Information Bureau
Government of India**

Ministry of Defence

Fri, 08 Nov 2024

India- Australia Joint Military Exercise AUSTRAHIND Commences In Maharashtra

The 3rd edition of joint military Exercise AUSTRAHIND commenced at Foreign Training Node, Pune in Maharashtra today. The exercise will be conducted from 8th to 21st November 2024. Exercise AUSTRAHIND is an annual event conducted alternatively in India and Australia. Last edition of the same exercise was conducted in Australia in December 2023. The Indian contingent comprising 140 personnel will be represented mainly by a battalion of the DOGRA Regiment and 14 personnel from the Indian Air Force. The Australian Army contingent comprising 120 personnel will be represented by the 13th Light Horse Regiment of the 10th Brigade of 2nd Division.

Aim of Exercise AUSTRAHIND is to promote military cooperation between India and Australia through enhancement of interoperability in conduct of joint sub conventional operations in semi-urban environment in semi-desert terrain under Chapter VII of the UN mandate. The exercise will focus on high degree of physical fitness, joint planning and joint tactical drills. The exercise will be conducted in two phases – combat conditioning and tactical training phase and validation phase. Drills/ aspects to be rehearsed during the exercise will include response to a terrorist action of capturing a defined territory; establishment of a Joint Operations Centre; conduct of joint counter terrorism operations like Raid and Search and Destroy Missions; securing of a helipad; employment of drones and counter drone measures and Special Heli Borne Operations, among others.

Exercise AUSTRAHIND will enable the two sides to share their best practices in tactics, techniques and procedures of conducting tactical operations. The exercise will also facilitate developing bonhomie and camaraderie between soldiers of both the sides.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2071767>

THE TIMES OF INDIA

Mon, 11 Nov 2024

Russia to deliver first of two missile frigates by monthend

India is set to receive the first of its two guided-missile warships being built in Russia by the end of this month, following a long delay due to ongoing Russia-Ukraine war. However, the delivery of

2 remaining squadrons of S-400 Triumf air defense missile systems is likely to be delayed until 2026, and lease of a nuclear-powered attack submarine until 2028.

The multi-role frigate, with a displacement of almost 4,000-tonne, will be handed over to the Indian crew of over 200 officers and sailors stationed at the Yantar Shipyard in Kaliningrad for the last few months, defence sources told TOI.

The warship will then be commissioned as INS Tushil by defence minister Rajnath Singh, who is slated to visit the country early-Dec for India-Russia Inter-Governmental Commission on Military Military Technical Cooperation (IRIGC-M&MTC) meet.

“The second frigate, Tamal, will be handed over early next year. Both the stealth frigates will be packed with weapons, including the BrahMos supersonic cruise missiles, and sensors to undertake a variety of missions,” a source said.

India in Oct 2018 had inked an umbrella agreement for procurement of four Grigorovich-class frigates, with the first two to be imported from Russia for around Rs 8,000 crore.

The other two are being built at Goa Shipyard (GSL) with transfer of technology at an overall cost of around Rs 13,000 crore, with the first being “launched” as Triput in July this year. These four warships will add to the six such Russian frigates, three Talwar-class and three Teg-class warships, already inducted in the Navy from 2003-04 onwards.

Delivery of fourth and fifth squadrons of S-400 surface-to-air missile systems, under the \$5.43 billion (Rs 40,000 crore) contract inked with Russia in 2018, in turn, will take place only by 2026. “India has asked Russia for faster delivery. But it looks difficult because Russia’s entire defence-industrial production is geared towards Ukraine war,” another source said.

IAF has deployed the first three S-400 squadrons, which can detect and destroy hostile strategic bombers, jets, spy planes, missiles and drones at a range of 380-km, in north-west and east India to cater for both China and Pakistan, as reported by TOI earlier. On underwater front, India in the past has operated two nuclear-powered attack submarines armed with conventional weapons (called SSNs), INS Chakra-1 and INS Chakra-2, after leasing them from Russia.

Then, in March 2019, India inked an over \$3 billion (Rs 21,000 crore) deal with Russia to lease a more advanced SSN for 10 years, but its delivery has also been delayed beyond 2027.

“Russia has been asked to deliver the SSN earlier, but it is doubtful before 2028,” the source said. The PM-led cabinet committee on security on Oct 9, incidentally, cleared the indigenous project to build two SSNs at a cost of Rs 40,000 crore, but it will take at least a decade for them to roll out.

India had of course commissioned its second nuclear-powered submarine with nuclear-tipped ballistic missiles (called SSBNs) as INS Arighaat in August and plans to induct the third as INS Aridhaman early next year, in a major boost for strategic deterrence.

<https://timesofindia.indiatimes.com/india/russia-to-deliver-first-of-two-missile-frigates-by-month-end/articleshow/115152914.cms>

India's Pinaka rocket system interests French Army, being evaluated for use

In a significant boost to India's "Make in India" initiative, a top French Army officer revealed that they are evaluating India's indigenous Pinaka multi-barrel rocket launcher (MBRL) system for potential use by their armed forces. The announcement comes as both nations continue to deepen their strategic and defence ties.

Developed by the Defence Research and Development Organisation and produced by Indian companies like Solar Industries, Larsen and Toubro, Tata, and Ordnance Factory Board, the Pinaka system has already gained export success with orders from Armenia and interest from other countries.

Range, Speed, and Capability

The Pinaka system's capability to hit targets at 75 kilometers and beyond, combined with its multiple variants, makes it an attractive option for the French Army. Brigadier General Richou highlighted India's reputation as a leading weapons producer, stating that the country is among the highest countries offering such systems

Speaking to ANI during his visit to India, Brigadier General Richou emphasized that the French military is keen on acquiring a system with the range and precision offered by Pinaka. "We are evaluating the Pinaka multi-barrel rocket launcher system because we need a system like that. We are evaluating it among the other systems offered by the highest countries offering such systems. India is among the highest countries producing weapons," he said.

The French officer, who is in India for high-level discussions, also underscored the importance of the growing bilateral relationship, describing it as much more than just a business transaction. "This is much more than a business partnership, this is cooperation, and this is a common future together," Brigadier General Richou added.

What is the Pinaka Rocket System?

The Pinaka MBRL has gained prominence on the global stage. The system is capable of striking targets up to 75 kilometers and has multiple variants, making it a versatile and powerful tool for modern artillery operations. Its success has already extended beyond India's borders, with countries like Armenia placing orders, and many others expressing interest in acquiring the system.

The French evaluation of Pinaka comes in the wake of earlier discussions between Indian and French military leaders. The system was notably one of the key topics during a high-level visit by India's Chief of Defence Staff, General Anil Chauhan, earlier this year.

India has also ramped up its efforts to boost indigenous defence exports, with the government under Prime Minister Narendra Modi tripling the country's defence exports since 2014. The Pinaka

MBRL, along with other advanced systems, plays a central role in this push to establish India as a major player in the global arms market.

<https://www.hindustantimes.com/india-news/pinaka-rocket-missile-system-made-in-india-being-considered-by-french-army-101731227146716.html>

THE ECONOMIC TIMES

Fri, 08 Nov 2024

India votes against Pakistan resolution on conventional arms control

India voted against a resolution by Pakistan on 'Conventional arms control at the regional and subregional levels'.

The resolution by Pakistan and Syria on 'Conventional arms control at the regional and subregional levels' in the First Committee of the UN General Assembly was adopted by recorded vote with 179 members voting in favour, an abstention by Israel while India was the sole country voting against the resolution.

The First Committee of the UNGA deals with disarmament, global challenges and threats to peace that affect the international community.

The resolution recognises the "crucial role of conventional arms control in promoting regional and international peace and security."

"Convinced that conventional arms control needs to be pursued primarily in the regional and subregional contexts since most threats to peace and security in the post- cold-war era arise mainly among states located in the same region or subregion," the resolution said.

It notes "with particular interest the initiatives taken in this regard in different regions of the world, in particular the consultations among a number of Latin American countries and the proposals for conventional arms control made in the context of South Asia, and recognising, in the context of this subject, the relevance and value of conventional arms control in regional security."

The resolution, "believing that militarily significant states and states with larger military capabilities have a special responsibility in promoting such agreements for regional security," decided to give "urgent consideration to the issues involved in conventional arms control at the regional and subregional levels."

<https://economictimes.indiatimes.com/news/defence/india-votes-against-pakistan-resolution-on-conventional-arms-control/articleshow/115074143.cms>

Indian submarine INS Vela visits Sri Lanka

Indian submarine INS Vela arrived in Sri Lanka on Sunday on a three-day visit to the island nation, the Indian High Commission said. INS Vela is a 67.5m long submarine with a crew of 53 and it is commanded by Commander Kapil Kumar.

The submarine is an indigenous Kalvari-class diesel-electric submarine and it was commissioned into the Indian Navy on November 25, 2021. During the submarine's stay in Colombo, its crew is expected to participate in activities organised by the Sri Lanka Navy to strengthen camaraderie between the two navies, the Sri Lankan Navy said in a statement.

In addition, personnel of the Sri Lanka Navy are expected to visit the submarine to take part in an awareness programme on its operational features. Moreover, the crew members of the submarine are expected to explore some of the tourist attractions in the country, it said. Concluding the official visit, INS Vela will depart the island on November 13.

The visit is classified as an Operational Turn Around (OTR), where the submarine will replenish provisions, the Indian embassy said in a statement. The Indian Navy / Coast Guard ships and submarines have been making regular Port calls in Sri Lanka.

The visit further strengthens the bilateral cooperation and camaraderie between the two maritime nations in keeping with India's 'Neighbourhood First' policy and the Prime Minister's vision of 'SAGAR' which stands for "Security and Growth for all in the Region", the statement added.

Commander Kapil Kumar will call on the Commander of the Western Naval Area, Rear Admiral WDCU Kumarasinghe at Western Naval Headquarters. Personnel from Sri Lanka Navy and High Commission of India will also visit the sub, The Economynext reported. A basketball match is planned between the Submarine crew and SLN personnel at Sri Lanka Naval Base in Welisara.

<https://economictimes.indiatimes.com/news/defence/indian-submarine-ins-vela-visits-sri-lanka/articleshow/115143631.cms>

Business Standard

India has effective mechanism to monitor oceans, says Navy chief Tripathi

India has a highly effective mechanism for monitoring the oceans, known as maritime domain awareness, and is fully aware of "who is where and who is doing what" to ensure the country's interests are not compromised, Chief of Naval Staff, Admiral Dinesh K Tripathi has said.

The Navy Chief also dismissed the dual carrier operation by China in the South China Sea as "nothing we should be concerned of".

Addressing the media after the grand finale of THINQ 2024, a nationwide quiz competition organised by the Indian Navy on Friday evening, Tripathi also said India keeps a "close watch" on activities in its "area of interest".

He made these remarks at the Ezhimala Naval Academy here in response to a question on China's growing influence in the region through its cooperation with Sri Lanka.

"What China does in any part of the globe, let them do it. What they do in our area of interest, we are keeping a close watch. Nothing happens in our part of the world which we do not know," CNS added.

He said the Navy is keeping a very close watch in our areas so that India's national interests are not compromised in any way, anywhere.

"When their units, whether military or non-military, operate in the Indian Ocean region, we do ensure that our national interests are not compromised. We have got a fantastic organisation to keep the oceans under watch, which is maritime domain awareness, and we know exactly who is where and who is doing what," the Navy Chief said.

He said the dual carrier operation is nothing concerning India.

"We have done these dual carrier operations for many years now," he added.

Tripathi also said the Indian Navy is very proud of the two young women Naval officers who are now on a mission to circle the globe in a boat as part of the Navika Sagar Parikrama-2.

"They are reaching their first port of call in Australia on Saturday. During the voyage, they will only touch four ports across the globe. It is a very challenging journey, as they will have to face rough seas and weather. But they are well-equipped and well-trained. They already have training for 36,000 nautical miles," Tripathi said.

Talking about the initiatives like THINQ quiz competition, he said that the Navy has several such initiatives to popularise the force among the countrymen, especially youths, and educate them on what the Navy does during peace and during 'not-so-peaceful times'. He said innovation is one of the top priorities for the Navy, and the Indian Navy always wanted to remain on top of the technology curve.

"There is a process in which we recruit our officers and cadets. We assess the suitability. I am not worried about the quality (of resources) which we are getting," he added.

He said the Navy also involved big public sector undertakings, medium, small, and micro establishments, and start-ups for technology sessions in an initiative to popularise the Navy's pursuit of technological mastery. For the THINQ 2024 editions, as many as 12,600 schools from 3,800 cities and towns in the country participated. Sixteen teams entered the semifinals, and eight teams contested in the grand finale held here.

https://www.business-standard.com/external-affairs-defence-security/news/india-has-effective-mechanism-to-monitor-oceans-says-navy-chief-tripathi-124110900819_1.html

Fri, 08 Nov 2024

Army Chief's Visit to Western Command: Review of Operational Readiness and Modernization Efforts

General Upendra Dwivedi, Chief of the Army Staff (COAS), conducted a critical review of the Western Command's operational readiness during his visit to the Headquarters in Chandimandir today. The visit, aimed at assessing the effectiveness of ongoing military preparedness, focused on the integration of advanced technologies, modernization initiatives, and strategic reforms necessary to meet evolving security challenges.

Focus on Force Modernization and Operational Efficiency

During the visit, the army Chief was briefed by Lieutenant Gen Manoj Kumar Katiyar, Army Commander of Western Command, on the progress of force modernization efforts. These initiatives are designed to enhance the operational capacity of the Army, ensuring it remains agile and combat-ready. The briefing also covered key logistical and administrative improvements, vital for supporting the Command's tactical objectives.

Gen Dwivedi lauded the Command's efforts but stressed the need for even greater integration of cutting-edge technologies to speed up operational decision-making. He stressed that modern warfare demands swift and precise responses, and technology would play a pivotal role in enhancing these capabilities. His remarks underscored the Army's commitment to staying ahead of adversarial advancements and reinforcing its readiness across all domains.

Strategic Geopolitical Awareness

Further discussions revolved around the importance of staying attuned to global geopolitical shifts. He urged the senior leadership to ensure that the Army's operations adapt to the shifting dynamics of international security. He pointed out that an in-depth understanding of global developments is critical for maintaining India's strategic advantage.

Tour of Kathua-Pathankot Forward Areas

In a key segment of the visit, Gen Dwivedi toured the forward operational areas in Kathua-Pathankot, where he was updated on the current security situation by the General Officer Commanding (GOC) of the Yol-based Rising Star Corps. The region, located at the crossroads of several sensitive areas, has witnessed significant military operations, particularly in counter-terrorism.

The chief expressed his admiration for the Rising Star Corps' professionalism, particularly highlighting the recent successes in counter-terrorism operations. He praised the troops' ability to maintain operational effectiveness while managing the complex security challenges in the region, acknowledging their role in ensuring peace and stability in the area.

Reinforcing Commitment to Readiness

His visit reaffirms the Indian Army's commitment to maintaining high operational standards. By continuously modernizing its forces and integrating advanced technologies, the Army is ensuring that it remains prepared for future challenges. The focus on logistical improvements and enhanced inter-service coordination also emphasizes the need for an agile and responsive military force.

<https://www.financialexpress.com/business/defence-army-chiefs-visit-to-western-command-review-of-operational-readiness-and-modernization-efforts-3660083/>

Business Standard

Sat, 09 Nov 2024

Defence forces seek green nod for ammunition storage expansion in Ladakh

The defence forces have sought green nod to build more ammunition storage in Ladakh, a move aimed at strengthening ammunition availability during military deployments. The main focus of this move are the forward regions in Eastern Ladakh, which is closer to China and has witnessed tensions in the past, The Economic Times reported on Saturday.

The security force's proposals, moved between April and July, also include strengthening security at Lukung, a village near Pangong Tso, and in Durbuk, the report added. India and China were engaged in a four-year standoff in the eastern Ladakh sector following the Galwan Valley clash in June 2020. Last month, both sides agreed on disengagement at the friction points and finalised an agreement on patrolling in the region.

According to the report, the proposals must be approved by the environment ministry. The defence forces aim to establish Formation Ammunition Storage Facilities (FASF) and underground caverns at strategic locations. Hanle and Photi La have been proposed for these FASF units.

Photi La, one of the highest motorable passes, is located 30 km from Hanle and leads to Demchok. Currently, ammunition is stored over 250 km away from Hanle and 300 km from Photi La, causing supply delays and affecting operational readiness, the report noted. The presence of FASF units will ensure adequate storage and better supervision of ammunition, enhancing supply efficiency and operational readiness.

Ahead of Diwali on November 1, India and China completed their disengagement at two friction points, Demchok and the Depsang Plain. The Galwan Valley clash marked the deadliest conflict between the two nations in over four decades, resulting in the loss of 20 Indian soldiers. With the new agreement in place, patrolling status is expected to revert to pre-April 2020 levels.

https://www.business-standard.com/external-affairs-defence-security/news/defence-forces-seek-green-nod-for-ammunition-storage-expansion-in-ladakh-124110900842_1.html

The Tribune

Sat, 09 Nov 2024

Why the Uber-IAF deal is problematic

On October 17, the Indian Air Force (IAF) signed an MoU with Uber to “provide reliable, convenient, and safe transportation services for IAF personnel, veterans and families.” The services provided would be for official travel and daily commutes. In September 2023, the Indian Navy had signed a similar MoU with Uber. Service members must provide their names, email IDs and mobile numbers and similar details of their family members to avail themselves of Uber’s services.

Many cybersecurity experts have raised serious concerns over the potential risks of entrusting sensitive data of military movements to a private, foreign company. Beyond basic personal details, over a period of time, the data could reveal travel patterns, place of posting, real-time geolocations, family and dependents’ place of work and routines. There are major security repercussions when a single company holds personally identifiable information of thousands of military personnel.

The Indian Air Force has sought to justify the signing of the MoU. The Sunday Guardian has reported that highly placed sources have stated that such agreements with foreign-based entities are planned in a holistic manner, ensuring that no data breach could happen while the data is being stored using Advanced Encryption Standard (AES)-256-bit encryption. Arguments have also been made that the personal data of military persons is already held with a host of companies like Amazon, Zomato, Blinkit, etc, and, therefore, there is no additional risk with Uber.

In analysing this dispassionately, two key questions must be answered. First, what is the link between personal data and national security? Second, what do we know about how private companies handle personal data?

We often look at personal data from the lens of privacy, but it has significant national security implications. Every click, search, purchase and social media post creates personal data. The smartphone is a repository of biometrics, health data, real-time location, financial transactions and secret conversations. All of this data is analysed to create a psychographic profile of individuals, with deep insights into people’s personalities, values, beliefs, ideologies and emotional triggers.

Technology companies monetise this data by using it to create detailed profiles that enhance ad targeting, personalise services and improve product offerings. Hostile powers use this data to design highly effective disinformation and influence campaigns.

At an individual level, adversaries could mount psychological operations harassing specific military personnel and their families to sow fear or create stress within the ranks, potentially undermining morale and operational readiness. Collectively, specific demographics and ideologies could be targeted to develop tailored messages that resonate with particular groups, turning small societal divides into chasms.

In the 2016 US elections, Russia's Internet Research Agency used Facebook and other social media to target specific groups, exploiting data to craft divisive messages on sensitive topics like race, gun rights and immigration. Personalised ads reached susceptible individuals, amplifying divisions and swaying public sentiment.

Similar tactics have been observed in events worldwide, such as during Brexit, the incitement of violence against the Rohingya in Myanmar in 2017, misinformation on vaccines during the Covid-19 pandemic and the Hong Kong protests of 2019. According to experts surveyed for the World Economic Forum's 2024 Global Risk Report, the number one risk identified for India was misinformation and disinformation.

We now turn to the second question on data handling. Data breaches are common. Uber has suffered data breaches in 2014, 2016, 2020, 2022 and 2023. While encryption is essential to protect data, it does not provide fail-safe security. According to Verizon's 2023 Data Breach Investigations Report, 74 per cent of the breaches involved the human element, which includes social-engineering attacks. Social-engineering in hacking refers to the use of psychological manipulation to trick individuals into revealing sensitive information, granting access to restricted systems and encrypted data.

Another critical issue is the storage location of the data and who has access to it. India passed the Digital Personal Data Protection Act in August 2023. The Act stipulates that the Central Government may, by notification, restrict the transfer of personal data by a data fiduciary for processing to such country or territory outside India as may be so notified. The rules have not yet been notified and, currently, there is no restriction on transferring personal data abroad except in some sectors like finance and insurance.

Foreign companies are bound by the laws of their home country, which means that they could be compelled to give data of Indians held by them to their government. For instance, China's National Intelligence Law of 2017 requires any organisation or citizen to support, assist and cooperate with state intelligence work. This law effectively requires companies to provide access to data, technology or any resources necessary for national intelligence operations.

Similarly, the US Clarifying Lawful Overseas Use of Data (CLOUD) Act, enacted in 2018, stipulates that US law enforcement agencies can access data stored by US-based companies, even if that data is held on servers outside the United States.

The commercial practices of tech companies further exacerbate these risks. Personal data held by companies is often sold to other companies and data brokers. For example, Meta (formerly Facebook) has faced multiple fines for privacy violations. In the shadowy world of data brokers, personal information is aggregated from various sources and freely traded. US intelligence agencies have admitted to buying personal data from brokers to assist in surveillance efforts.

Against this backdrop, the military must regard personal data with a level of seriousness and responsibility far exceeding that of private companies, which often view data as a mere asset for profit generation. The core mission of the military is to safeguard India from threats across all fronts — land, sea, air and, increasingly, the digital domain. Consequently, it is imperative that the

military takes the lead in establishing and enforcing the highest standards for data-handling, prioritising security and confidentiality above all else. This is where the Uber MoU is problematic.

<https://www.tribuneindia.com/news/comment/why-the-uber-iaf-deal-is-problematic/>

The Tribune

Sun, 10 Nov 2024

Focus on synergy as Navy to join drills in mountainous terrain

The Armed Forces will on November 10 begin a major training exercise in the high mountains of the country's sensitive northeastern region opposite China. The nine-day drill, code-named 'Poorvi Prahar', will involve elements from the Army, Navy and Air Force, and is aimed at generating synergy and validating joint operations in rugged high-altitude terrain.

The Navy's involvement in the exercise focuses attention on two aspects in the Indian military — the increasing combat role of the Navy in a theatre away from its traditional maritime domain and the recently introduced practice of cross-posting junior and middle-level officers among the three services.

While tri-services drills have taken place in the past in places such as Vishakhapatnam on the eastern seaboard and the Andaman and Nicobar Islands, it is perhaps for the first time that the Defence Ministry has publicly announced a tri-service exercise in land-locked mountains. Earlier, exercises in Ladakh and the northeast involved the Army and the Air Force.

The Navy, unlike the other two services, is a multi-dimensional force, trained and equipped for operating under, on and above the surface through the use of submarines, ships and aircraft along with a highly proficient special force called the Marine Commando Force (Marcos).

Though the Marcos have been deployed in Kashmir, particularly around Wular Lake, on anti-terrorist operations for years, its multi-dimensional capability came to the fore during the prolonged stand-off with China along the LAC from of 2020 onwards.

Marcos were deployed at the Pangong Tso lake in Ladakh, one of the sites of heavy Chinese incursions and face-offs, while its Boeing P-8I maritime surveillance aircraft, based at Arakkonam in Tamil Nadu, and unmanned aerial vehicles flew reconnaissance and survey missions along the LAC to detect Chinese movements. It is expected that the Navy's surveillance aircraft, Marcos and communication experts would be part of 'Poorvi Prahar'.

<https://www.tribuneindia.com/news/india/focus-on-synergy-as-navy-to-join-drills-in-mountainous-terrain>



Mon, 11 Nov 2024

33 ग्राम वजन, हथेली से छोटा साइज... जानिए इंडियन आर्मी के ब्लैक हॉर्नेट नैनो ड्रोन के बारे में जो आतंकियों को उनके बिल में घुसकर खोज निकालेगा!

भारतीय सेना ने भी इजरायल जैसी ड्रोन तकनीक का इस्तेमाल करना शुरू कर दिया है. 'आज तक' ने जम्मू-कश्मीर में भारतीय सेना की इकाइयों द्वारा इस्तेमाल किए जाने वाले हथेली के आकार के ड्रोन "ब्लैक हॉर्नेट" का जायजा लिया. इस ड्रोन से सेना को काफी मदद मिलेगी.

कीट के आकार वाला यह ड्रोन सैनिकों को आतंकवाद विरोधी अभियानों के दौरान गुप्त रूप से खुफिया जानकारी एकत्र करने, इमारतों के अंदर से लाइव विजुअल भेजने या गोलीबारी के दौरान चुपचाप सटीक लक्ष्यों की जानकारी दे सकता है.

इससे पहले आपने देखा होगा कि कैसे इजरायल माइक्रो ड्रोन का इस्तेमाल करके अपने दुश्मनों का खात्मा करता है. कीट के आकार के इस तरह के ड्रोन से इजरायल ने दूसरे देशों में भी ना केवल अपने लक्ष्यों को साधा बल्कि दुश्मन का खात्मा करने के लिए भी यह अहम साबित हुए हैं.

महज 33 ग्राम है वजन

कीट आकार के इस ड्रोन को ब्लैक हॉर्नेट कहा जाता है जिसका वजन सिर्फ 33 ग्राम है. यह नॉर्वे का है जो बहुत महंगा है. इन कीट के आकार के ड्रोंस का इस्तेमाल वर्तमान में भारतीय सेना की राष्ट्रीय राइफल्स और विशेष बल कर रहे हैं. यह मूल रूप से एक छोटा सा हेलीकॉप्टर जैसा है जिसमें ट्विन रोटर लगे हुए. इसकी रेंज करीब दो किलोमीटर की है.

आतंकरोधी अभियान में अहम साबित हो सकते हैं ड्रोन

इसमें छोटा सा एंटीना लगा है जिसे आप आसानी से हाथ से नियंत्रित कर सकते हैं. ये ड्रॉन्स किसी कमरे में घुसकर वहां की जानकारी ले सकते हैं, इसके अलावा बंधक बचाव, आतंकवाद विरोधी जैसे अभियानों के लिए यह बहुत ही अहम हैं, जहां बड़े ड्रोन का उपयोग करना बहुत मुश्किल हो जाता है. ये खिड़की या दरवाजे से अंदर घुसकर लक्ष्यों की पहचान कर सकते हैं. इस ड्रॉन्स की खासियत की है यह सुनिश्चित कर सकते हैं कि घर के अंदर पकड़े गए लोग वास्तव में वे लोग हैं जिनकी तलाश सेना या विशेष बलों को है.

इन खूबियों से है लैस

वजन की बात करें तो यह महज 33 ग्राम का है लेकिन अविश्वसनीय रूप से बहुत शक्तिशाली है. इसमें एक बहुत ही ताकतवर फ्रंट कैमरा लगा हुआ है जो पूरी तरह से कलर और हाई डेफिनेशन (HD) है. यह रियल टाइम की लाइव तस्वीरें वापस भेजता है. इसलिए भले ही इसकी रेंज लगभग दो किलोमीटर है, लेकिन इसका उपयोग करने वालों ने

आजतक को बताया कि 100, 200 मीटर वह आदर्श रेंज है जिस पर इसका उपयोग किया जाता है क्योंकि इसे मूल रूप से महज खिड़की के माध्यम से फेंका जाता है.

अंदर जाकर यह बाहर लाइव फीड या तस्वीरें भेजता है और फिर केना, विशेष बल, कमांडो, इस बारे में महत्वपूर्ण निर्णय लेते हैं कि वास्तविक लक्ष्य कौन हैं और क्या आतंकवादियों के साथ लोग तो बंधक नहीं बनाए गए हैं. सटीक जानकारी मिलने के बाद वह यह सुनिश्चित कर पाते हैं कि कोई जनहानि ना हो. ये माइक्रो ड्रोन, भारतीय सेना के लिए बहुत ही कारगर साबित हो सकते हैं.

<https://www.aajtak.in/defence-news/story/a-look-of-palm-sized-black-hornet-micro-drones-used-by-indian-army-units-in-jammu-and-kashmir-ntc-dskc-2093345-2024-11-11>

The Statesman

Sat, 09 Nov 2024

Quantum Tech to revolutionize India's defence operations: CDS

Highlighting the transformative potential of Quantum Technology in modern warfare, Chief of Defence Staff General Anil Chauhan emphasised its strategic significance for India's Armed Forces at the Annual Niche Technology Nexus (NTN-2024) seminar.

Organized by Headquarters Integrated Defence Staff (HQ IDS) with the Centre for Joint Warfare Studies, the seminar focused on advancing Aatmanirbharta, aligning with India's defence self-reliance goals.

In his address, he discussed how Quantum Technology could shape the future of warfare, particularly through innovations in Quantum Key Distribution, advanced navigation, and sensing systems. He further highlighted the integration of Artificial Intelligence, Machine Learning, and Quantum Technology into Electronic Warfare (EW) systems as a catalyst for transforming military operations.

General Chauhan stressed the importance of investment in research, partnerships, and skill development to position India as a global leader in Quantum and EW technologies.

Key recommendations from the seminar included adopting Quantum Safe Algorithms for secure defence networks, and advancements in Quantum RF Sensors, ISR products, atomic and optical clocks, and Quantum Inertial Navigation Systems to strengthen India's future theatre-based armed forces.

<https://www.thestatesman.com/india/quantum-tech-to-revolutionize-indias-defence-operations-cds-1503362853.html>

Israel moves forward on deploying Arrow-3 missile defence system in Germany in 2025

Israel's Defence Ministry has begun coordinating joint preparations with the German Federal Ministry of Defence for the initial deployment of Israel's Arrow-3 missile interception system on German soil in 2025, it said on Sunday. The ministry said it has held meetings at Israel Aerospace Industries (IAI) along with Israel defence firm Elbit Systems and MBDA Deutschland GmbH.

The Arrow system, which includes the Arrow-2 and Arrow-3 interceptors, was developed in cooperation between Israel and the United States to counter long-range ballistic missile threats, with IAI as the prime contractor.

Israel, with U.S. approval, agreed last year to sell the Arrow-3 system to Germany in a \$3.5 billion deal, its biggest defence sale to date. Germany and its neighbours in Europe are boosting defence spending following Russia's war in Ukraine.

The U.S. is a partner in the Arrow project and Boeing is involved in its production. Arrow is the upper layer of Israel's missile defences, together with the Iron Dome, which takes out short-range threats such as mortars and rockets, and mid-range defender David's Sling.

Arrow-2 intercepts ballistic missiles at long range, while the newer Arrow-3 specialises in knocking out missiles before they re-enter the Earth's atmosphere. Using cutting-edge technologies, the system proved effective against Iranian missile attacks in April and October.

After the Arrow systems helped to thwart Iran's massive missile and drone attack in April, a number of countries are interested in purchasing the technology, according to IAI.

<https://economictimes.indiatimes.com/news/defence/israel-moves-forward-on-deploying-arrow-3-missile-defence-system-in-germany-in-2025/articleshow/115148758.cms>

China to display new fighter jet, drone ship at its airshow

The Chinese military will unveil some of its latest warplanes, including a new fighter jet and a large drone ship known as the "Killer Whale", at its upcoming annual air show in Zhuhai city. The 15th Airshow of China is to be held in Zhuhai at South China's Guangdong province from November 12 to 17.

The People's Liberation Army (PLA) every year displays its capabilities at the air show. The PLA Navy will display J-15T jet designed to be operated from the 3rd aircraft carrier, the Fujian, which is equipped with an electromagnetic catapult unlike the other two carriers, Liaoning and Shandong, which are fitted with ski-jump take-off ramps.

The design of the J-15T is based on the baseline type of the J-15 and was modified to allow it to be launched by an aircraft carrier's catapult system, official media here reported.

Wang Yanan, chief editor of Aerospace Knowledge magazine told the state-run China Daily that the J-15T can also be deployed on Liaoning and Shandong, both of which have a ski jump method for launching fixed-wing aircraft.

The navy also unveiled a large drone ship known as the "Killer Whale" to be displayed at the air show. The trimaran is capable of "operating on open sea for a long time", according to Hong Kong-based South China Morning Post.

It said the "Killer Whale" has a dual diesel and electric propulsion system, which allows it to reach a maximum speed of more than 40 knots (74km/h) with a range of more than 4,000 nautical miles (7,400km). The Post described the vessel as an "all-round warrior" that can carry a range of weapons - including rockets, anti-ship missiles and ship-to-air missiles - and is equipped with a take-off and landing pad for helicopters at the rear.

The vessel could be independently deployed and carry out patrols, antisubmarine operations and air defence work as well as rescue operations. Beijing wanted to turn Zhuhai "a one-stop destination" for countries looking to buy Chinese military technology, Liang Guoliang, a Hong Kong-based military commentator told the Post.

He added that the ship's range and versatility makes it an ideal choice for navies in the Middle East. "They don't need very big ships to cover the narrow waterways. China has made unmanned ships that suit their operational needs and budgets," Liang said.

<https://economictimes.indiatimes.com/news/defence/china-to-display-new-fighter-jet-drone-ship-at-its-airshow/articleshow/115143071.cms>

THEWEEK

Fri, 08 Nov 2024

Why Russian President Vladimir Putin believes India should be included in list of global superpowers

Russian President Vladimir Putin recently pitched for India to be included in the list of global superpowers and cited his reasons for the same.

Addressing the plenary session of the Valdai Discussion Club in Sochi on Thursday, the Russian president said, "India should undoubtedly added to the list of superpowers, with its billion-and-a-

half population, the fastest growth among all economies in the world, ancient culture, and very good prospects for further growth."

Pointing out that India is leading the world in economic growth, Putin said Russia is developing relations with India in all directions.

Observing that the contacts between India and Russia in the security and defence sphere are growing, he said, "Look at how many types of Russian military equipment are in service with the Indian armed forces. There is a great degree of trust in this relationship."

Russia does not just sell weapons to India India, but the two countries jointly design them, he said and cited the example of BrahMos cruise missile project.

A supersonic cruise missile capable of being launched from various platforms, including land, sea, and air, the BrahMos cruise missile project is a joint venture between India and Russia. All three services possess the missile system, named after the Brahmaputra River in India and the Moskva River in Russia.

"In fact, we made it (the missile) fit for use in three environments—air, sea, and land. These projects, conducted for the benefit of India's security, are ongoing," Putin said, and added that these projects demonstrate a high level of mutual trust and cooperation.

<https://www.theweek.in/news/defence/2024/11/08/why-russian-president-vladimir-putin-believes-india-should-be-included-in-list-of-global-superpowers.html>



Sun, 10 Nov 2024

After SA-21 ‘Growlers’, India To Get Russian SA-22 ‘Greyhounds’ That Protects Putin From Ukrainian UAVs

India will co-develop the Pantsir S-1 short-range air defense system, which has so far kept Russian patriarch Vladimir Putin’s residence on Valdai Lake safe from Ukrainian drones. The two countries have inked an agreement to co-develop the air defense system, which NATO reports as SA-22 Greyhounds.

India has integrated its recently acquired S-400 (NATO reporting name: SA-21 Growler) long-range air defense system and is still awaiting two units. While the deal for the long-range surface-to-air missile created consternation in Western countries, New Delhi did manage to avoid sanctions through its diplomatic dexterity.

The Ukraine war has slowed arms trade between the two countries. Now, they are collaborating to develop new iterations of the Pantsir-S1 close-in air defense system. This system is designed to defend ground installations against various aerial threats, such as fixed-wing aircraft and

helicopters, ballistic and cruise missiles, precision-guided munitions, and unmanned air vehicles. It can also engage light-armored ground targets.

Bharat Dynamics Limited announced on X the signing of a Memorandum of Understanding (MoU) with Rosoboronexport. “Bharat Dynamics Limited and Rosoboronexport (ROE), Russia entered into an MoU for cooperation on Pantsir variants, air defense missile-gun systems. The MoU was signed by Commodore A.Madhavarao,(Retd), CMD, BDL, and Mr. Kovalenko German, DDG, Naval Department, ROE on the side-lines of 5th IRIGC Subgroup at Goa,” the post said.

The India-Russia Intergovernmental Commission (IRIGC) has two divisions: the Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC), co-chaired by the EAM from India and First Deputy Prime Minister (DPM) Denis Manturov from Russia, and the Military & Military-Technical Cooperation (IRIGC-M&MTC), headed by the Defence Ministers of the two countries.

Along with the S-400, the Pantsir-SM plays a vital role in India’s layered air defense network. Its capabilities are particularly suited for protecting critical infrastructure, such as military bases and command centers, from diverse aerial threats. Russia uses Pantsir S-1 to shield its military-industrial facilities. The system, priced at \$15 million, is known for its ability to intercept complex, low-radar-signature targets and high-precision projectiles from multiple launch rocket systems. Russia has accelerated the production of these systems to meet increasing demand, and Rostec continues to develop new versions of the system.

Pantsir – Defending Critical Infrastructure From Airborne Threats

The Pantsir is a mobile air defense system mounted on a truck chassis, typically a Ural-53234 8×8, Kamaz-6560 8×8, or MAN SX45, which provides it with great mobility across various terrains. The system has twelve 57E6 or 57E6-E surface-to-air missile launchers and two dual 30mm 2A38M automatic cannons. These weapons allow the system to respond effectively to threats at varying distances. The Pantsir-S missile has a range of 1 to 12 km, while the 30mm automatic cannons can engage targets between 0.2 and 4,000 meters. These characteristics make it a versatile system capable of neutralizing fast-moving aerial targets, such as drones, helicopters, and cruise missiles, at different distances.

Many countries worldwide have deployed the Pantsir-S1, including Algeria, Iran, Iraq, Russia, and the United Arab Emirates. It has sophisticated accessories, such as radio controls with direction-finding or infrared systems and autonomous acquisition and tracking radars. These detection systems allow the Pantsir-S to operate independently, without external support, to detect and engage aerial targets.

The Pantsir-S1 system combat vehicle carries 12 missiles and 1404 rounds, while the transport-loading vehicle holds 24 missiles and 2808 rounds. The system can engage targets moving at speeds up to 1000 m/s, with the missiles traveling at speeds up to 1300 m/s. Each combat vehicle can simultaneously engage up to four targets. The system’s fire rate is 12-16 targets per minute and its hit probability is up to 0.9. Its reaction time is 4-6 seconds.

Shielding Putin Against Ukrainian Aerial Threats

Since the beginning of the Ukraine war, Russia has been fortifying its air defense systems against Kyiv's drones. The Ukrainian hacker group Cyber Resistance leaked the location of Russian Pantsir air defense systems. Apart from protecting the state buildings, including the Ministry of Defense Offices, the roof-mounted Pantsir S-1 has been deployed on towers 3.7 kilometers away from Vladimir Putin's residence on Valdai Lake, according to updated Google Earth imagery from May 6, 2024.

The system is efficient and can operate under harsh environmental conditions, withstanding wind speeds up to 30 m/s, temperatures ranging from -40 to +60 °C, and relative humidity up to 98% at 35 °C. It remains operational at altitudes up to 3000 meters, in rain intensities up to 5 mm/h, and in dust concentrations up to 2.5 g/m³. This makes it well suited for India, which has an operational area extending from the Himalayan mountains to the deserts of Rajasthan.

The US has been so intrigued by the air defense system that in June 2020, it smuggled a Pantsir-S1 out of Libya after it was captured from forces aligned with Russia-backed Khalifa Haftar. The US forces reportedly transferred the Pantsir-S1 from Zuwarah International Airport to Ramstein Air Base in Germany.

<https://www.eurasiantimes.com/against-drones-and-incoming-aircraft/>



Fri, 08 Nov 2024

Russia To “Boost” China’s J-10 Fighters With New Engines; Unlike PLAAF, IAF Ignores Su-30MKI Engine Upgrades

The United Engine Corporation (UEC) of Russia's Rostec State Corporation will showcase the improved AL-31FN Series 5 engine for the first time abroad at the Zhuhai Airshow 2024 in China, which will be held from November 12 to 17. According to the UEC, the Series 5 engine will significantly expand the Chengdu J-10's capabilities in terms of altitude and flight range.

The AL-31FN variant was developed by Salyut to power the Chengdu J-10. The variant featured slightly more thrust of 12.7 tonnes-force and a gearbox relocated from the top to the bottom of the engine. Later, J-10 variants and production lots were equipped with the improved AL-31FN engines. The series 3, for example, features a thrust of 13.7 tonnes-force.

Indian Su-30MKIs are powered by the thrust vectoring AL-31FP engine, built by UMPO as well as in India by Hindustan Aeronautics Limited (HAL) at the Koraput facility under a deep technology transfer agreement. The AL-31FP has the same thrust of 12.5 tonnes-force as the baseline AL-31F but can deflect its nozzle to a maximum of ±15° at a rate of 30°/sec.

The AL-41F1, which is the stage 1 power plant of the Russian Su-57 stealth fighter, features a thrust of 15 tonnes-force. It's likely that the thrust of the AL-31FN series 5 engine to be displayed at Zhuhai is likely close to the thrust of the AL-41F1. In other words, the new variants of the J-10

fighters to be inducted into the PLAAF would feature significantly longer ranges and better maneuverability.

IAF Su-30MKI Fleet Upgrade

In February, the Indian Ministry of Defence (MoD) approved a Rs 60,000 crore (\$7.5B) upgrade of 84 IAF Su-30MKI fighters, led by HAL and supported by DRDO. This project aims to enhance the aircraft's capabilities with new radars, mission control systems, and weapon systems. The upgrade is as much an attempt to improve the Su-30MKI's performance as to promote self-reliance in defense manufacturing through the integration of indigenous systems, such as new radar and electronic warfare systems.

The project is divided into two phases. The first focuses on installing new avionics and radars, followed by enhancements to the flight control systems. The most significant feature would be the indigenous AESA radar called Virupaksha. The Virupaksha would likely be a scaled-up variant of the Uttam AESA radar developed for the LCA Mk-1A, with significant software upgrades. The Virupaksha AESA will take advantage of the Su-30 MKI's much larger forward cross-sectional area to feature more TR modules than the 700 fitted on the Uttam AESA, giving the radar more power and increased detection range.

The IAF also plans to integrate an indigenously developedIRST that will significantly improve air-to-air and air-to-ground targeting capabilities. The Air Force is set to commence work on integrating the new systems within the year. However, timelines in defense system development are known to slip.

No Engine Upgrade

Intriguingly enough, MoD's upgrade plans do not include any changes in the Su-30MKI's airframe or engine. The IAF's decision to upgrade the aircraft to retain the existing AL-31FP engine may prove limiting. It will not allow the modernized variant to carry powerful sensors that require more onboard electrical power.

For example, there is a growing trend to fit multispectral optical-electronic or radar surveillance systems in pods that can be carried by heavy fighters. These pods can then be deployed to plug gaps in AWACS surveillance. There is also a trend to give fighter aircraft strategic capability by arming them with long-range hypersonic aeroballistic and cruise missiles.

These missiles are much heavier than contemporary air-launched cruise missiles and would, therefore, require more powerful engines. Considering the significant (20 yrs) extension of airframe life that will accrue from Su-30MKI modernization, it's difficult to understand why the IAF didn't opt for the AL-41F-1S.

The AL-41F-1S is 16% more powerful, 100% more cost-effective (based on engine life), and more fuel-efficient. Russia claims that fitting the AL-41F-1S would not require any airframe modifications. It would be in India's interest to modernize the Su-30MKI, considering current and future trends in air warfare and imbibing the lessons of the Russian SMO.

HAL Shortcomings

Circumstantial evidence suggests that the HAL viewed the AL-31FP production license and ToT with a sense of entitlement. It didn't see the technology infusion as a breakthrough opportunity to master engine technology and use Indian ingenuity to improve engine performance.

India signed the initial contract for the license production of Su-30MKI aircraft at HAL and the supply of associated AL-31FP kits in 2000. The contract gave India an option to procure additional AL-31FP kits, which India exercised in October 2012. Russia's UMPO started delivery of 920 AL-31FP engine kits via Rosoboronexport to India in March 2013 for assembly at HAL and fitment on HAL-assembled Su-30MKI aircraft. The delivery of the kits was to span 10 years.

Procurement Of 240 AL-31FP Engines

On September 9, the MoD signed a contract with HAL for 240 AL-31FP Aero Engines for Su-30MKI aircraft, which will cost over Rs 26,000 crore (2.2B). According to official statements, these aero engines will be manufactured by the Koraput Division of HAL and are expected to sustain the IAF's Su-30 fleet, ensuring the country's defense preparedness remains high.

HAL would supply 30 aero-engines per annum as per the contractual delivery schedule. The supply of all 240 engines would be completed over the next eight years. The additional order will presumably cover the life cycle of the IAF's Su-30MKI fleet, catering to the extended airframe life accruing from the planned upgrade.

PLAAF's Contrasting Approach to Upgrades

It's interesting to note how the PLAAF has progressively improved the combat capabilities of its Chengdu J-10 fighters with engine upgrades. The J-10 variant powered by the AL-31FN Series 5 engine will be much more potent than the J-10 initially inducted into service.

Contrast the PLAAF approach of aggressive upgrades with that of the IAF. Despite the deep technology transfer that accompanied the Russian production license to HAL for the AL-31FP, the IAF remains stuck with the same engine that powered the initially inducted Su-30MKI fighters.

<https://www.eurasiantimes.com/russia-to-boost-chinas-j-10-fighters/>



Sun, 10 Nov 2024

Russia 'Steps Up' Long-Range Precision Attacks On Ukrainian Military Using Grom-E1 Missiles

The Telegraph reports that Russian forces have stepped up long-range precision attacks on Ukrainian forces using the 120 km range Grom-E1 guided missiles. These missiles allow Russian Aerospace Forces (RuAF) Su-30SM and Su-34 fighters to strike targets deep within Ukrainian territory while staying outside the range of Ukrainian AD systems and AMRAAM-armed F-16

fighters. According to the Telegraph report, Grom-E1 winged missiles have been used to attack targets in Mirnograd, Kherson, and Kharkiv.

In contrast to the 120 km range of the Grom-E1, Ukraine's French-supplied Hammer bomb, an analog of the Grom-E1, has a range of about 64 km. This forces Ukrainian Air Force launch platforms (Mig-29, Su-27) to enter the engagement envelope of Russian S-300 and S-400 AD systems, as well as Su-30SM and Su-35S fighters armed with RVV-SD missiles.

Russia's first use of the Grom-E1 was reported in early September following an attack on Kharkiv, during which the Trade Center and the Sports Palace, both of which had been converted into military facilities, were struck. The Grom family of air-launched weapons is a variant of the Kh-38 missiles and includes the Grom-E1 guided missile, and the Grom-E2 guided glide bomb.

Kh-38 Missile Family

The Kh-38/Kh-38M is a family of air-to-surface short-range rocket-propelled guided missiles for precision strikes, developed to succeed the Kh-25 and Kh-29 missile families. Work on the creation of the Kh-38 started in the 90s at the Technical Missile Corporation (TMC).

The Kh-38 is a universal modular missile that can be fitted with different seekers, such as semi-active laser homing (SALH), radar homing, thermal imaging (TI), and satellite navigation (SATNAV). The missile features foldable fins for storage in internal weapons bays, such as the ones on the Su-57. It can be launched using a variety of helicopters and airplanes.

The Kh-38 is a Russian analog of the AGM-179 Joint Air-to-Ground Missile (JAGM), which was developed to replace the current air-launched BGM-71 TOW, AGM-114 Hellfire, and AGM-65 Maverick missiles.

Grom Family Winged Weapons

Unlike the Kh-38 family missiles, which feature fins, Grom family missiles feature foldable wings, giving them longer range and the ability to approach the target from any direction. Russia positions them as an analog of the American JDAM-ER.

Both Grom-E1 and Grom-E2 feature a normal aerodynamic configuration and a common cylindrical body with an ogive nose cone, folding swept-back mid-body wing, and an aft actuator assembly. The weapons can be carried externally or internally in bomb bays of fifth-generation air-combat platforms.

Grom-E1 Specifications

The Grom-E1 missile has a launch mass of 594 kg, a length of 4.2 m, a body diameter of 0.31 m, and a wingspan of 1.9 m. The missile features a 315 kg high-explosive (HE) fragmentation warhead coupled with an impact fuze. It uses two-stage rocket propulsion comprising booster and sustainer rocket motors.

The Grom-E1 and E2 missiles integrate the solid-fuel engine from the Kh-38ME family of short-range air-to-surface missiles. The Grom-E1 can be released from an altitude of 500 to 12,000 m and a speed of 140 to 445 ms. It can strike targets at a distance of 10 – 120 km. Because of the

aerodynamic lift from its wings, the missile can engage its target from any direction, even turning around 180° to strike the target from the rear.

The missile's average flight speed under initial launch conditions (height: 12,000 m, speed: 445 m/s, range: 120 km) is 300 m/s. It can manoeuvre sustaining 4 g loads. The missile uses INS (inertial navigation system) with SATNAV (Glonass) updates for navigation. As such, it can only be used against static targets, unlike the Kh-38 family, which can also be used against moving targets using a TI or SALH seeker.

Grom-E2

The air-launched Grom-E2 missile has a slightly higher launch mass of 598 kg but the same length, body diameter, and wingspan as the Grom-E1. In the Grom-E2, the sustainer rocket motor of the Grom-E1 is replaced with another fragmentation warhead weighing 165 kg at the rear of the fuselage. Consequently, the total warhead weight goes up to 480 kg.

The Grom-E2 missile can be launched at ranges of 10 – 50 km, from altitudes of 500 m -12,000 m, and at launch speeds between 140 m/s and 445 m/s.

Conclusion

The stepped-up use of the Grom-E1 by Russian forces suggests that the missile is now in serial production. The Grom-E1 fills a critical gap in the long range precision strike capability of the Russian forces.

Russian UMPK bombs such as FAB-250 and FAB-500 cannot strike targets beyond 80 km. So far, Russian forces have likely used the Kalibr missile for precision attacks on targets at 120 km range. The 1,500 km-plus-range Kalibr is a much more expensive missile than the Grom-E1. Its lower cruising speed, around 230 m/s, compared to the Grom-E1's 300 m/s, makes it more susceptible to engagement by Ukrainian air defense systems.

Weighing 594 kg, the Grom missile is considerably lighter than the Kalibr missile, which weighs 1,300 kg or more. The Grom-E1 missile can be launched from the RuAF's Su-57, Su-34, and Su-30SM fighters, unlike the Kalibre, which can only be launched by bomber platforms. Serial production of the missile and its component commonality with the Kh-38 missile family would make the Grom-E1 much more affordable than the Kalibr cruise missiles.

The Grom-E1's ability to attack its target from any direction, along with its high cruise speed, likely makes the missile as difficult to engage as the UMPK-kitted FAB bombs. Large-scale usage of the Grom-E1 by Russian forces will facilitate more effective interdiction of supplies and manpower, thereby further degrading Ukrainian defenses.

<https://www.eurasiantimes.com/russia-steps-up-long-range-precision-attack/>

THE TIMES OF INDIA

Sat, 09 Nov 2024

With 7 more satellites, Isro plans to provide navigation signals to civilians' mobiles: INSPACe chairman

ISRO is working to make India's own regional navigation system (NaVIC) easily accessible to civilians soon, as the accurate positioning system was till now confined to strategic use, said Pawan Goenka, chairman of space regulator and promoter INSPACe. He also said that "by 2025, Isro will target to launch a dozen satellites every year, including six GSLV launches", to fulfil the growing demand of the space sector.

"We are introducing seven navigation satellites with the new L1 band that will make NaVIC signals accessible in civilians' mobile phones with a compatible chipset. Of the seven, one satellite has already been launched, six more will be launched. Navigation satellites launched earlier worked on different bands (L5 and S)," Goenka informed during a media roundtable.

He also said that NaVIC (Navigation With Indian Constellation) is more accurate than other navigation systems in the world and govt is working to widen its reach. NaVIC provides positioning accuracy of better than 10 metre throughout India and better than 20 metre for the area surrounding India by 1,500 km.

Announcements of creation of INSPACe, space policy and FDI policy have given a much-needed boost to the sector, the chairman said, adding, "our next objective is to bring in Space Law, which the country doesn't have".

"We have prepared the first draft within dept. We will now send it for consultation and then it will go to the ministry for clearance before the cabinet approval. The entire process will be completed by either end of this year or by the first quarter of next year," he said.

To grab a lion's share of the \$5.2 billion global small satellite market, Isro is planning to focus on small launchers and satellites, Goenka said. Isro's mini-launcher SSLV has, therefore, been developed for this purpose and its technology will be transferred to the private sector in the next two years.

Kulasekarapattinam spaceport in Tamil Nadu, which is being developed especially for small launches, will be ready in two years and will coincide with SSLV tech transfer to the private sector, he said.

The SSLV, together with small rockets of Indian startups AgniKul and Skyroot, will try to fulfil the growing demand for small satellites within and outside the country.

Isro and the Indian startups will aim to launch around 25 satellites every year, he said. With growing interest of youth in the space sector, INSPACe is also collaborating with universities to carve out full-year degree courses in space to meet the talent demand in the growing sector, Goenka said.

“In its promoter’s role , a Standing Committee for Inter-ministerial Coordination (SCMIC) of INSPACe meets every month to do authorisation and set targets. We are trying to set up a single-window system to fast-track clearances for applications of private companies. We have till now 566 applications from the private sector, including 67 for launchers and subsystems, 173 for satellites and 28 for ground segments,” Goenka said.

“We have currently planned to provide funding to eight startups of up to Rs 1 crore and also set up a tech centre for this purpose,” the INSPACe chairman said, adding that “we are also encouraging private companies to set up their own constellation of small satellites in space”. With multi-front growth in the space sector, India's space economy is expected to touch \$44 billion by 2033.

<https://timesofindia.indiatimes.com/india/with-7-more-sats-isro-plans-civilians-access-to-navigation-signals/articleshow/115097475.cms>

THE TIMES OF INDIA

Sun, 10 Nov 2024

Is AI dominance inevitable? A technology ethicist says no, actually

Anyone following the rhetoric around artificial intelligence in recent years has heard one version or another of the claim that AI is inevitable. Common themes are that AI is already here, it is indispensable, and people who are bearish on it harm themselves.

In the business world, AI advocates tell companies and workers that they will fall behind if they fail to integrate generative AI into their operations. In the sciences, AI advocates promise that AI will aid in curing hitherto intractable diseases.

In higher education, AI promoters admonish teachers that students must learn how to use AI or risk becoming uncompetitive when the time comes to find a job. And, in national security, AI's champions say that either the nation invests heavily in AI weaponry, or it will be at a disadvantage vis-a-vis the Chinese and the Russians, who are already doing so.

The argument across these different domains is essentially the same: The time for AI skepticism has come and gone. The technology will shape the future, whether you like it or not. You have the choice to learn how to use it or be left out of that future.

Anyone trying to stand in the technology's way is as hopeless as the manual weavers who resisted the mechanical looms in the early 19th century. In the past few years, my colleagues and I at

UMass Boston's Applied Ethics Center have been studying the ethical questions raised by the widespread adoption of AI, and I believe the inevitability argument is misleading.

History and hindsight

In fact, this claim is the most recent version of a deterministic view of technological development. It's the belief that innovations are unstoppable once people start working on them. In other words, some genies don't go back in their bottles. The best you can do is harness them to your good purposes.

This deterministic approach to tech has a long history. It's been applied to the influence of the printing press, as well as to the rise of automobiles and the infrastructure they require, among other developments. But I believe that when it comes to AI, the technological determinism argument is both exaggerated and oversimplified.

AI in the field(s)

Consider the contention that businesses can't afford to stay out of the AI game. In fact, the case has yet to be made that AI is delivering significant productivity gains to the firms that use it.

A report in *The Economist* in July 2024 suggests that so far, the technology has had almost no economic impact. AI's role in higher education is also still very much an open question. Though universities have, in the past two years, invested heavily in AI-related initiatives, evidence suggests they may have jumped the gun.

The technology can serve as an interesting pedagogical tool. For example, creating a Plato chatbot that lets students have a text conversation with a bot posing as Plato is a cool gimmick. But AI is already starting to displace some of the best tools teachers have for assessment and for developing critical thinking, such as writing assignments.

The college essay is going the way of the dinosaurs as more teachers give up on the ability to tell whether their students are writing their papers themselves. What's the cost-benefit argument for giving up on writing, an important and useful traditional skill?

In the sciences and in medicine, the use of AI seems promising. Its role in understanding the structure of proteins, for example, will likely be significant for curing diseases. The technology is also transforming medical imaging and has been helpful in accelerating the drug discovery process.

But the excitement can become exaggerated. AI-based predictions about which cases of COVID-19 would become severe have roundly failed, and doctors rely excessively on the technology's diagnostic ability, often against their own better clinical judgment. And so, even in this area, where the potential is great, AI's ultimate impact is unclear.

In national security, the argument for investing in AI development is compelling. Since the stakes can be high, the argument that if the Chinese and the Russians are developing AI-driven autonomous weapons, the United States can't afford to fall behind, has real purchase.

But a complete surrender to this form of reasoning, though tempting, is likely to lead the U.S. to overlook the disproportionate impact of these systems on nations that are too poor to participate in

the AI arms race. The major powers could deploy the technology in conflicts in these nations. And, just as significantly, this argument de-emphasizes the possibility of collaborating with adversaries on limiting military AI systems, favouring arms race over arms control.

One step at a time

Surveying the potential significance and risks of AI in these different domains merits some skepticism about the technology. I believe that AI should be adopted piecemeal and with a nuanced approach rather than subject to sweeping claims of inevitability. In developing this careful take, there are two things to keep in mind:

-First, companies and entrepreneurs working on artificial intelligence have an obvious interest in the technology being perceived as inevitable and necessary, since they make a living from its adoption. It's important to pay attention to who is making claims of inevitability, and why.

-Second, it's worth taking a lesson from recent history. Over the past 15 years, smartphones and the social media apps that run on them came to be seen as a fact of life - a technology as transformative as it is inevitable. Then data started emerging about the mental health harms they cause teens, especially young girls. School districts across the United States started to ban phones to protect the attention spans and mental health of their students. And some people have reverted to using flip phones as a quality of life change to avoid smartphones.

After a long experiment with the mental health of kids, facilitated by claims of technological determinism, Americans changed course. What seemed fixed turned out to be alterable. There is still time to avoid repeating the same mistake with artificial intelligence, which potentially could have larger consequences for society.

<https://timesofindia.indiatimes.com/science/is-ai-dominance-inevitable-a-technology-ethicist-says-no-actually/articleshow/115150279.cms>

THE TIMES OF INDIA

Mon, 11 Nov 2024

Nasa's Roman Space Telescope gets major upgrade in its quest to search space

Nasa's Nancy Grace Roman Space Telescope team has achieved a significant milestone by successfully integrating the Roman Coronagraph Instrument onto the mission's Instrument Carrier. This crucial step took place at Nasa's Goddard Space Flight Center in Greenbelt, Maryland, where the space telescope is currently being developed.

The integration marks an important step forward in Nasa's efforts to search for habitable worlds and, potentially, life beyond Earth. The coronagraph, which was designed, built, and tested at Nasa's Jet Propulsion Laboratory (JPL) in Southern California, arrived at Goddard earlier this year. This instrument is part of Nasa's next flagship astrophysics mission, set to launch no later than

May 2027, and aims to explore scientific mysteries related to dark energy, exoplanets, and infrared astrophysics.

Search for exoplanets with advanced technology

The Roman Coronagraph Instrument is a technology demonstration designed to directly observe exoplanets by blocking the intense light from their host stars. This cutting-edge technology uses a suite of masks, prisms, detectors, and self-flexing mirrors to reduce the glare, making distant planets visible.

According to Rob Zellem, Roman Space Telescope deputy project scientist for communications at Nasa Goddard, “In order to get from where we are to where we want to be, we need the Roman Coronagraph to demonstrate this technology. We’ll be applying those lessons learned to the next generation of Nasa flagship missions that will be explicitly designed to look for Earth-like planets.”

The coronagraph’s goal is to test and showcase its capabilities in space, serving as a technological stepping stone for future missions like Nasa’s proposed Habitable Worlds Observatory, which could be the first telescope specifically designed to search for signs of life on exoplanets.

Integration and future plans

The coronagraph was mounted onto the Instrument Carrier, a large grid-like structure that connects the space telescope’s primary mirror and spacecraft bus. This process utilised the Horizontal Integration Tool, previously used for Nasa’s Hubble and James Webb Space Telescopes.

The coronagraph, which measures about 5.5 feet (1.7 meters) across and resembles a baby grand piano in size, was carefully positioned using specialised adapters and tools. The integration also involved adding insulation layers to ensure the instrument remains at the correct temperature in space.

Brandon Creager, lead mechanical engineer for the Roman Coronagraph at JPL, explained, “You can think of [the Instrument Carrier] as the skeleton of the observatory, what everything interfaces to.”

The Instrument Carrier will eventually hold both the coronagraph and the mission’s primary science instrument, the Wide Field Instrument, which is scheduled to be integrated later this year. Following the successful integration, engineers will conduct various checks and alignment tests to ensure everything is functioning correctly.

Liz Daly, the integrated payload assembly integration and test lead for Roman at Goddard, shared the excitement, saying, “It’s really rewarding to watch these teams come together and build up the Roman observatory. That’s the result of a lot of teams, long hours, hard work, sweat, and tears.”

The mission has seen collaboration between Nasa, JPL, and international partners, including ESA, Jaxa, CNES, and the Max Planck Institute for Astronomy, highlighting the global effort in advancing space exploration technology.

<https://timesofindia.indiatimes.com/science/nasas-roman-space-telescope-gets-major-upgrade-in-its-quest-to-search-space/articleshow/115163341.cms>

Scientists plan to install giant underwater curtain to stop 'Doomsday Glacier' from melting

Scientists have come up with a radical plan for stopping the melting of massive Antarctic glaciers, which can lead to catastrophic flooding on the US East Coast.

The researchers have said that by installing a giant underwater curtain, they can thicken the artificial glaciers with seawater or they can cool the bedrock to mitigate warm waters from entering the Thwaites Glacier, also called the "Doomsday Glacier".

The Thwaites Glacier has been melting at an accelerated speed because of climate change and is likely to raise global sea levels by 10 feet, with some fearing that coastal cities like New York, Charleston, Atlantic City, and Miami will be flooded.

To avoid this catastrophic flooding, researchers headed by the Climate Systems Engineering Initiative at the University of Chicago published a report in which they called the proposed idea a "major initiative".

Professor of geophysical sciences and co-author of the white paper, Douglas MacAyeal, said, "Our argument is that we should start funding this research now, so that we aren't making panicked decisions down the road when the water is already lapping at our ankles."

Here's how researchers plan to save 'Doomsday Glacier'

In the new report, one proposal said that seawater can be pumped on the surface of the Doomsday Glacier where it will freeze because of cold air temperatures and thicken the glacier. However, the idea comes with its risks and costs, warned the authors. The seawater's salinity can damage the ice's structural integrity and energy is required for pumping large volumes of seawater.

UK startup Real Ice has been working on the idea of pumping seawater since 2019. Earlier, the field trials showed promising results in Canada, however, its deployment at a large scale will cost around \$6 billion per year and need enormous energy input. Scientists also proposed other geoengineering solutions for stopping the melting of the glacier.

According to some experts, the ideas are "radical" and said that geoengineering "would be difficult or impossible to achieve and draw focus away from the more necessary conversation of reducing carbon emissions."

Climate economist at the Columbia Climate School, Gernot Wagner, said, "When we talk about glacial geoengineering, we need to tell the truth, which is that it's not a solution to climate change - at best, it's a painkiller."

<https://www.wionews.com/science/scientists-plan-to-install-giant-underwater-curtain-to-stop-doomsday-glacier-from-melting-774999>

World Science Day for Peace and Development observed on 10 November

In 2001, the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared that 10 November would be celebrated as World Science Day for Peace and Development following the 1999 World Conference on Science in Budapest, Hungary.

The idea originated from the need to highlight the role of science and scientists in building sustainable societies, and to communicate about scientific developments with citizens. World Science Day is an opportunity for scientists to demonstrate the relevance and importance of science in daily life to the general public, and to engage with them directly through discussions.

Many concrete programmes, projects and funding for scientific research has been generated by the celebrations since the observation of the day started in 2001. In 2023, the United Nations General Assembly (UNGA) declared the period between 2024 and 2033 as the International Decade of Sciences for Sustainable Development, marking an important step in using scientific knowledge to build a sustainable future.

The effort is led by UNESCO, and is a concentrated push to mobilise a wide range of scientific disciplines, as well as interdisciplinary and emerging fields to bring about transformation in societies, economies and the environment.

World Science Day is aimed at promoting scientific literacy and encouraging deeper collaborations between academia, industries and governments.

Youth at the Forefront

This year's theme for the World Science Day for Peace and Development is 'Youth at the Forefront'.

It is an opportunity for scientists to engage with non-scientific participants and young people. UNESCO has organised programmes where young people can directly ask questions to distinguished scientists on the various ways in which science contributes to daily lives. UNESCO has also organised a webinar, titled 'Why Science Matters – Engaging Minds and Empowering Futures' on 12 November, at 18:30 hours IST, delivered from the UNESCO HQ in Paris, France.

Those interested in participating on the Webinar, can do so by registering here.

<https://www.news9live.com/science/world-science-day-for-peace-and-development-observed-on-10-november-2746379>

Could we ever decipher alien languages? Uncovering how AI communicates may be key

In the 2016 science fiction movie *Arrival*, a linguist is faced with the daunting task of deciphering an alien language consisting of palindromic phrases, which read the same backwards as they do forwards, written with circular symbols. As she discovers various clues, different nations around the world interpret the messages differently – with some assuming they convey a threat.

If humanity ended up in such a situation today, our best bet may be to turn to research uncovering how artificial intelligence (AI) develops languages. But what exactly defines a language? Most of us use at least one to communicate with people around us, but how did it come about? Linguists have been pondering this very question for decades, yet there is no easy way to find out how language evolved.

Language is ephemeral, it leaves no examinable trace in the fossil records. Unlike bones, we can't dig up ancient languages to study how they developed over time.

While we may be unable to study the true evolution of human language, perhaps a simulation could provide some insights. That's where AI comes in – a fascinating field of research called emergent communication, which I have spent the last three years studying.

To simulate how language may evolve, we give agents (AIs) simple tasks that require communication, like a game where one robot must guide another to a specific location on a grid without showing it a map. We provide (almost) no restrictions on what they can say or how – we simply give them the task and let them solve it however they want. Because solving these tasks requires the agents to communicate with each other, we can study how their communication evolves over time to get an idea of how language might evolve.

Similar experiments have been done with humans. Imagine you, an English speaker, are paired with a non-English speaker. Your task is to instruct your partner to pick up a green cube from an assortment of objects on a table. You might try to gesture a cube shape with your hands and point at grass outside the window to indicate the colour green. Over time you'd develop a sort of proto-language together. Maybe you'd create specific gestures or symbols for "cube" and "green". Through repeated interactions, these improvised signals would become more refined and consistent, forming a basic communication system.

This works similarly for AI. Through trial and error, they learn to communicate about objects they see, and their conversation partners learn to understand them. But how do we know what they're talking about? If they only develop this language with their artificial conversation partner and not with us, how do we know what each word means? After all, a specific word could mean "green", "cube", or worse – both. This challenge of interpretation is a key part of my research.

Cracking the code

The task of understanding AI language may seem almost impossible at first. If I tried speaking Polish (my mother tongue) to a collaborator who only speaks English, we couldn't understand each other or even know where each word begins and ends. The challenge with AI languages is even greater, as they might organise information in ways completely foreign to human linguistic patterns.

Fortunately, linguists have developed sophisticated tools using information theory to interpret unknown languages. Just as archaeologists piece together ancient languages from fragments, we use patterns in AI conversations to understand their linguistic structure. Sometimes we find surprising similarities to human languages, and other times we discover entirely novel ways of communication.

These tools help us peek into the "black box" of AI communication, revealing how artificial agents develop their own unique ways of sharing information. My recent work focuses on using what the agents see and say to interpret their language. Imagine having a transcript of a conversation in a language unknown to you, along with what each speaker was looking at. We can match patterns in the transcript to objects in the participant's field of vision, building statistical connections between words and objects.

For example, perhaps the phrase "yayo" coincides with a bird flying past – we could guess that "yayo" is the speaker's word for "bird". Through careful analysis of these patterns, we can begin to decode the meaning behind the communication. In the latest paper by me and my colleagues, to appear in the conference proceedings of Neural Information Processing Systems (NeurIPS), we show that such methods can be used to reverse-engineer at least parts of the AIs' language and syntax, giving us insights into how they might structure communication.

Aliens and autonomous systems

How does this connect to aliens? The methods we're developing for understanding AI languages could help us decipher any future alien communications. If we are able to obtain some written alien text together with some context (such as visual information relating to the text), we could apply the same statistical tools to analyse them.

The approaches we're developing today could be useful tools in the future study of alien languages, known as xenolinguistics. But we don't need to find extraterrestrials to benefit from this research.

There are numerous applications, from improving language models like ChatGPT or Claude to improving communication between autonomous vehicles or drones. By decoding emergent languages, we can make future technology easier to understand. Whether it's knowing how self-driving cars coordinate their movements or how AI systems make decisions, we're not just creating intelligent systems – we're learning to understand them.

<https://www.deccanherald.com/technology/could-we-ever-decipher-alien-language-uncovering-how-ai-communicates-may-be-key-3269355>

Scientists develop self-learning robot which imitates humans to perform household chores

With the modern world being increasingly shaped by the rapid growth and advancement in groundbreaking Artificial Intelligence (AI) and futuristic technologies, self-sufficient, humanoid robots might not remain science fiction anymore.

Scientists and researchers at the TU Wien University in Vienna, Austria might have just taken the next step forward, as they have designed an independent and self-sufficient housecleaning robot, that can ease the burden of humans by assisting them in their day-to-day activities, according a report by Interesting Engineering.

A group of researchers at TU Wien has created a self-learning robot that can imitate people to perform basic chores like washing sinks, and cleaning the floor of the house. After all, at the end of a long and tiring day, who would not want a friendly helping hand completing the mundane daily chores of their house?

At first thought, a robot being able to clean your house might not sound that astonishing. However, this invention is very crucial because it is extremely difficult to program a robot to slide a sponge over the intricately curved edges of a sink.

The team at TU Wien successfully cracked it. In order to train robots to perform a certain task, the researchers maneuvered a workaround by combining observation with tactile input from human teachers. Soon, the scientists plan to use these robots for tasks outside the house as well.

The robots may learn other activities such as sanding, painting, polishing surfaces, and applying adhesives using the same method, as per the researchers. Speaking about the importance of this invention, professor Andreas Kugi, a member of the Automation and Control Institute at TU Wien University, said, "Capturing the geometric shape of a washbasin with cameras is relatively simple. But that's not the crucial step. It is much more difficult to teach the robot which type of movement is required for which part of the surface. How fast should the motion be? What's the appropriate angle? What's the right amount of force?"

"In a workshop, someone might look over the apprentice's shoulder and say, 'You need to press a little harder on that narrow edge'. We wanted to find a way to let the robot learn," said Christian Hartl-Nesic, chief of the Industrial Robotics group in professor Andreas Kugi's team.

<https://www.deccanherald.com/technology/scientists-develop-self-learning-robot-which-imitates-humans-to-perform-household-chores-3270228>

