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Defence News

Defence Strategic : National/International



Press Information Bureau
Government of India

Ministry of Defence

Sat, 31 Dec 2022

Keel Laying by Shri Giridhar Aramane, Defence Secretary, for Two Warships of ASW SWC Project at GRSE, Kolkata, on 31 DEC 22

Keel laying of the two warships (Yard 3033 and Yard 3036) of Anti-submarine Warfare Shallow Craft (ASW SWC) project under construction by GRSE, Kolkata, was undertaken on 31 Dec 22 by Shri Giridhar Aramane, IAS, Defence Secretary.

Speaking on the occasion, Defence Secretary appreciated GRSE's efforts towards achieving the significant milestone. He stated that laying of keel for these two ships reinforces our resolve towards completely indigenous shipbuilding as part of Prime Minister's vision of 'AatmaNirbhar Bharat'. The ASW SWC ships will have over 80% indigenous content, ensuring that large scale defence production is executed by Indian manufacturing units thereby generating employment and capability build up within the country. He further said that with the induction of ASW SWC ships, the IN's ASW capability will be enhanced. VAdm Kiran Deshmukh, CWP&A, RAdm Sandeep Mehta, ACWP&A, Cmde PR Hari (Retd), CMD, GRSE, Cmde Indrajeet Das Gupta, WPS (Kol), Directors and other senior officials of GRSE and Indian Navy were also present during the occasion.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1887783>



Sat, 31 Dec 2022

Government Starts Process to Buy 100 more K9-Vajras

The Defence Ministry has started the process for the procurement of 100 more K9-Vajra tracked self-propelled howitzers which are built in India by Larsen & Toubro (L&T) using technology transferred from South Korean defence major Hanwha Defense. "The Defence Ministry issued the

Request For Proposal to L&T in November. Once they respond to it, the contract negotiations will begin,” a defence official confirmed.

At the height of tensions in eastern Ladakh in 2020, the Army deployed one regiment of K-9 Vajra tracked self-propelled howitzers there to augment its long-range fire power in the backdrop of a massive build-up of forces by China across the Line of Actual Control. Buoyed by their performance, the Army is looking at eventually procuring 200 additional guns. The induction of Dhanush, K-9 Vajra and M777 Ultra Light Howitzers has enhanced the reach of artillery firepower on the northern borders, as reported by The Hindu earlier.

The repeat order could not be more than the volume of the original order, so the number was fixed at 100 howitzers, the official explained.

The K9 Vajra is a 155 mm, 52-calibre tracked self-propelled howitzer built by L&T with technology transferred from South Korean defence major Hanwha Defense based on its K9 Thunder. The 100th gun was delivered to the Army in February 2021, the contract for which was signed in May 2017. The contract also involved maintenance transfer of technology to an Army base workshop to support the howitzers throughout their operational life cycle.

The K9 Vajra was mainly bought for use in deserts, but the standoff prompted them to be deployed in the mountains as well, officials had stated earlier. To ensure that these systems performed optimally in the extreme cold weather conditions of the mountains, the Army also procured winterisation kits for the regiment deployed. There are nine items including batteries, oils and lubricants which need to be insulated from extreme temperatures and don't freeze at -20 degrees celsius, which the kits cater for.

Since the standoff, the Army has deployed its entire range of medium artillery guns and long-range rockets in the region to augment its long-range fire power as part of the reorientation towards the northern borders.

<https://www.thehindu.com/news/national/defence-ministry-starts-process-to-buy-100-more-k-9-vajra-howitzers/article66324023.ece>



Sat, 31 Dec 2022

Drone Startup Wins ICG Contract for 10 VTOLs

In line with the government's policy of embracing Drone Technology, the Indian Coast Guard (ICG) has just concluded its maiden contract for 10 multicopter (VTOL) drones. Drone startup Sagar Defence Engineering Private Limited and ICG have inked the contract for these drones, which will on induction boost interdiction capabilities as well as boost marine surveillance of the ICG. ICG had issued open RFP for procuring tender under Make in India route and after undergoing rigorous trials on high seas, Sagar Defence Engineering qualified.

Capt Nikunj Parashar, Managing Director and founder Sagar Defence Engineering confirmed this to Financial Express Online in an exclusive interaction. And, "This is one of the technologies which were showcased earlier this year during Swavlamban in New Delhi to Prime Minister

Narendra Modi,” he says. Also, “These drones have also been acquired by the Indian Navy and on behalf of the government these have also been gifted to the Sri Lankan Navy by the Chief of Naval staff recently,” says Capt Nikunj Parashar. According to an official statement issued late Friday evening (December 30, 2022) the drones ICG is getting has the capability to be launched both from the ships while underway, as well as Shore Stations. These drones are expected to play an important role in the reach of ICG during surveillance and security operations. They can also be deployed for Search and Rescue operations (SAR) – both by day and night. To meet emerging new threats in the country’s maritime zones and search and rescue areas, around 100 additional drones are expected to be inducted by 2025 in ICG.

Competition

There were six companies competing for this contract. These include: IdeaForge (Mumbai), Raphe mphibir (Noida), Aerosense Technologies Private Ltd, Endureair Systems Private Ltd., Indigenous Robotic Unmanned Systems Private Ltd., and Sagar Defence Engineering Private Limited.

How did Sagar Defence Engineering qualify for this contract?

“We have developed special technology which can be integrated into drones for landing and takeoff from moving platforms,” the founder of the company explains.

According to him, drones generally land and take off from land and it is extremely difficult to land and take off from moving platforms like cars, Jeeps, tanks and warships. “The drone is capable of flying upto 20kms at the same time it can take off and land from moving ships up to speeds 30kmph and withstand wind upto 45kmph.”

Most importantly, this drone changes the way maritime security surveillance is carried out. “It will act as an ear and eyes on the high seas where our brave soldiers can be kept at a distance while carrying out security and surveillance,” he explains.

In an earlier interaction, Capt Parashar had explained that the drone for the Indian Navy has been specifically made for it and the landing and the taking off technology has been developed in tandem with Indian Navy DSR

‘Varuna’ drone for the Navy developed along with NTDAC (Naval Technology Development acceleration cell) has been delivered and it is the first time that 30 such drones can land and take off from warships.

Drones for the Indian Navy

Financial Express Online has reported earlier that these drones from Sagar Defence Engineering Pvt Ltd will be used for transferring and moving materials. And gradually it would have the capability to evacuate during a medical emergency.

The company has also demonstrated personnel air mobility vehicles to the Deputy PM of Australia during his visit to INS Hansa in Goa.

<https://www.financialexpress.com/defence/drone-startup-wins-icg-contract-for-10-vtols/2932831/>

Max Drones Sighted in Four Punjab Districts along Pakistan Border

Four districts of Punjab along the border with Pakistan reported the most number of drone sightings last year, according to home ministry officials, who said most of them were China-made and that 22 were shot down, leading to seizure of narcotics, arms and explosives. The Border Security Force (BSF) has identified Amritsar, Ferozepur, Gurdaspur and Fazilka on the international border where more than 85% of payload originating from across the border was dropped. Citing BSF data, the officials said that out of 200 drone sightings between July and December, 176 were recorded in these four districts. Of the 22 drones brought down by BSF this year, 21 were in these districts - up from one last year. BSF is deployed along the international border with Pakistan in Rajasthan, Gujarat, Punjab and Jammu and Kashmir.

Punjab has 23 districts and shares borders with J&K, Himachal Pradesh, Haryana and Rajasthan. Besides Punjab, the drones were sighted in Rajasthan's Sriganganagar, Bikaner and Jaisalmer (North), the officials said, adding that August and September recorded the most activity in the year from across the border. BSF, along with industry experts and institutes, has also taken up a study to ascertain flight paths and origins of drones that were brought down. From 2020 to 2022, as many as 369 drone sightings were recorded in Punjab, with 47 of them in 2020, 64 in 2021 and 258 in 2022 till December 23, as per the data available with the BSF. Last year on June 26, two drones carrying explosives crashed into the Jammu air force station, damaging a building and injuring two airmen.

Besides narcotics, BSF seized arms ammunition, tiffin bombs and AK-47 pistols being ferried by these unmanned aerial vehicles (UAVs). BSF is also giving incentives to its personnel for sighting and shooting of drones, while the government of Punjab has provided more than 300 personnel to monitor drones along the border. Punjab shares a 553-km-long border with Pakistan. Smuggling of narcotics into Punjab using land routes is a major concern for the law enforcement agencies.

In October last, the home ministry said BSF can carry out search and seizure operations up to 50 km from the border - up from 15 km earlier - in three states that share international boundaries with Pakistan and Bangladesh.

"These drones are being used to smuggle drugs and weapons into the Indian side, apart from conducting aerial surveillance," said a senior official. "They have emerged as a security threat, especially in border areas of the state. We have proposed to acquire anti-drone technology by collaborating with agencies like DRDO and NTRO."

<https://m.economictimes.com/news/india/max-drones-sighted-in-four-punjab-districts-along-pakistan-border/articleshow/96667463.cms>

IAF Focuses on Green Tech, Explores Alternative Fuel to Cut Down Emission

By Huma Siddqui

In line with Prime Minister Narendra Modi's commitment to attain net-zero emissions by 2070, Indian Air Force (IAF) has started adopting new technologies to cut carbon emissions.

The IAF had steered the Bio-Jet Fuel project as a Technology Demonstration to reduce the carbon footprint in the aviation sector. And its endeavour is to increasingly fly as many of its aerial platforms on the blended Bio-Jet Fuel. "Ground trials are likely to commence soon for the Dornier aircraft. Feasibility studies are also underway for the same on fighter aircraft," a senior IAF confirmed to Financial Express Online.

Globally, in the aviation sector — both military and commercial — is a major source of carbon emissions. And countries worldwide are looking at green options to cut these emissions down. India too is focusing on sustainable fuel and is part of several groupings and consultations which work on green fuel.

IAF & Green Fuel

"Following successful trials on the AN-32 aircraft, airworthiness certification by the Centre for Military Airworthiness & Certification (CEMILAC) was given to the IAF last November. This was for the Bio-Jet blend in the ratio of 10:90," the officer quoted above said.

As has been reported earlier, the Bio-Jet Fuel cleared for aviation by CEMILAC is produced and supplied by the Council for Scientific & Industrial Research Indian Institute of Petroleum, Dehradun. The Bio-Jet Fuel is of hydrocarbon type, produced by the conversion of lipids through a single step catalytic hydro processed esters and fatty acids. And the IAF is presently sourcing Bio-Jet Fuel from CSIR, IIP only. It is understood that MRPL, Mangalore is in process of setting up a production plant with ToT from CSIR, IIP Dehradun.

Can this be scaled up?

To cut down the carbon emissions for the Indian aviation industry, as reported earlier that Sustainable Air Fuel (SAF) can play a huge role; however, its large scale production is marred with challenges.

Global Trend

The US Air Force is expected to adopt carbon free fuel. In 2021, e-Aviation fuel according to reports has been developed by 'Twelve' a company which is into carbon transformation. The research for this fossil-free jet fuel was funded by the USAF. And this fuel is good for military and commercial aircraft.

The US based Twelve in collaboration with Emerging Fuels Technology has developed a fossil-free fuel. And in place of petrochemical-based alternatives this fuel can be used and there is no requirement of changing the design of the plane or commercial laws.

Royal Air Force (UK RAF)

It plans to achieve net-zero emissions by 2040. In 2021 it announced about accomplishing the world's first flight on 100 percent synthetic fuel. This fuel has been developed in collaboration with Zero Petroleum, a commercial partner. And later in this decade, it is working towards replacing the petroleum based fuels.

Brazil

The South American nation has passed legislation for biofuel. This legislation however is focused on commercial aviation. In 2021 under a new law the National Bio-kerosene Program went into effect and the goal of this programme is to urge the commercial aviation sector to adopt SAF.

What is Bio-kerosene?

It is a biofuel and can be used in place of aviation kerosene and is known by the acronym QAV-1. Made from municipal trash, and other biofuels like animal fats, vegetable oils like soy, it is renewable and it also minimizes pollution emitted by aircraft.

China

World's largest polluters, it has also joined the bandwagon but only in the commercial sector. In 2019, China Southern Airlines announced the use of aviation biofuel and completed its first transcontinental flight.

According to reports, scientists in Switzerland have developed a way to make carbon-neutral jet fuel and they have used air and sunlight. This is expected to be used for hard-to-electrify heavy transport.

Russia has already forged partnership to develop biofuel – Airbus, Gazprom Neft, and Aeroflot, have together formed the first association of developers and producers of SAF in that country. And the plan is to have the first flight on such a fuel take off in 2024.

<https://www.financialexpress.com/defence/iaf-focuses-on-green-tech-exposes-alternative-fuel-to-cut-down-emission/2932413/>

THE ECONOMIC TIMES

Sun, 01 Jan 2023

India Enhanced Overall Military Capability in 2022

India embarked on a major overdrive in 2022 to significantly bolster its overall military prowess and focused on its strategic goals in South Asia as a fresh attempt of transgression in the Tawang sector by the Chinese troops amid the unresolved eastern Ladakh border standoff renewed the focus on the looming threat from China along the frontier. The Indian troops guarding the nearly 3,500-km Line of Actual Control (LAC) maintained an assertive approach in sync with the broader

national security doctrine and procured a variety of military platforms and weapons to enhance their combat capabilities.

In line with a decision taken at the 16th round of military talks, the two sides carried out disengagement from Patrolling Point 15 in the Gogra-Hotsprings area of eastern Ladakh in September, taking forward similar exercises in other friction points last year. But the face-off between the two of the planet's biggest military forces lingered on in Demchok and Depsang regions though the Indian side pressed for completion of the disengagement in remaining friction points at the earliest.

As the fresh clash in the Yangtse area of Arunachal Pradesh's Tawang sector on December 9 renewed the focus on China's evil designs, Defence Minister Rajnath Singh said in Parliament that the Chinese troops tried to "unilaterally" change the status quo but the Indian Army compelled them to retreat.

In the course of the year, India expanded military cooperation with almost all friendly countries in South Asia in the face of China's consistent attempts to increase its influence in the region. As the national security planners devised strategies to deal with myriad security challenges facing the country, the armed forces started procurement of a significant number of military platforms and weapons including light tanks, anti-ship missiles, long range guided bombs, futuristic infantry combat vehicles, mounted gun systems and different types of drones.

In October, India tested a ballistic missile fired from its first indigenous nuclear-powered submarine, INS Arihant which was seen as a major milestone to further boost the country's strategic strike capabilities.

India has become only the sixth country, alongside the US, Russia, the UK, China and France, to have nuclear-powered submarines armed with ballistic missiles. In December, India successfully test-fired nuclear-capable ballistic missile Agni-5 that can strike targets at ranges up to 5,000 km. The Agni-5 project is aimed at boosting India's nuclear deterrence against China which is known to have missiles like Dongfeng-41 having ranges between 12,000-15,000 km.

Agni-V can bring almost the entire Asia including the northernmost part of China as well as some regions in Europe under its striking range. In the course of the year, India also carried out test firing of the extended range version of the Brahmos missile, the Prithvi-II missile, Agni-4, Agni-3 and Helina missiles.

The Indian Army has also been focusing on enhancing infrastructure along the LAC. From construction of roads, bridges and ammunition depots to bolstering its surveillance apparatus, the Army is ramping up military infrastructure at a rapid pace for quicker mobilisation of troops. In September, Prime Minister Narendra Modi commissioned India's first indigenously-built aircraft carrier INS Vikrant (IAC I) that made the country part of an elite group of nations capable of manufacturing aircraft carriers above 40,000 tonnes category. The Navy said the aircraft carrier will be able to play a role in ensuring peace and stability in the Indo-Pacific region.

The year 2022 saw the Indian Army continuing its anti-militancy operations in Jammu and Kashmir besides keeping a strong vigil over the Line of Control.

At the same time, only three minor incidents of "violations" were recorded along the (LoC) in Jammu and Kashmir after Indian and Pakistani armies agreed to observe a ceasefire in February last year, according to the defence ministry.

In a year-end report, it also said that Pakistan continued to retain the "proxy war infrastructure" and "functionality" of terrorist training camps.

In March, Pakistan lodged a strong protest with India following an incident of an accidental firing of a Brahmos missile that landed in that country.

Following a high-level probe into the incident, three officers of the Indian Air Force were sacked for the incident as the investigation found that deviation of the Standard Operating Procedures (SOP) by them led to the accidental firing of the missile.

In the year, the defence ministry also rolled out the 'Agnipath' recruitment scheme with an aim to bring down the age profile of the armed forces and make them more agile.

The scheme, announced on June 14, seeks to recruit youths between the age bracket of 17-and-half years and 21 for only four years with a provision to retain 25 percent of them for 15 more years. For 2022, the upper age limit has been extended to 23 years.

Several parts of India witnessed violent protests against the scheme with the agitators demanding its roll back as the new model does not provide a job guarantee to 75 percent of recruits. However, the protests fizzled out within a few days.

In September, Gen Anil Chauhan became India's new Chief of Defence Staff with a mandate to implement the ambitious theaterisation plan that aims to ensure tri-services synergy and prepare the armed forces for future security challenges facing the nation.

Gen Chauhan, a former Eastern Army Commander, took charge as the country's senior-most military commander over nine months after first Chief of Defence Staff (CDS) Gen Bipin Rawat died in a helicopter crash in Tamil Nadu.

According to the theaterisation plan, each of the theatre commands will have units of the Army, the Navy and the Air Force and all of them will work as a single entity looking after security challenges in a specified geographical territory under an operational commander.

In a boost to India's focus on defence indigenisation, Prime Minister Narendra Modi laid the foundation stone in Vadodara for production of European C-295 military transport aircraft on October 30.

The Tata Group will manufacture 40 C-295 medium transport aircraft at the facility in cooperation with global aerospace major Airbus under the provisions of a Rs 21,935 crore deal that the two firms inked last year to supply the planes to the Indian Air Force.

The contract with the government is for supplying 56 aircraft and Airbus will deliver the first 16 planes in 'fly-away' condition from its final assembly line in Spain between September 2023 and August 2025. In the same month, the Indian Air Force (IAF) inducted the first fleet of indigenously-built Light Combat Helicopter (LCH), 'Prachand', 23 years after the need for such a lethal platform for mountain warfare was felt following the Kargil conflict with Pakistan.

Developed by state-run aerospace major Hindustan Aeronautics Ltd (HAL), the 5.8-tonne twin-engine chopper is armed with air-to-air missiles, 20 mm turret guns and rocket systems, and it is capable of destroying enemy tanks, bunkers, drones and other assets in high-altitude regions. In 2022, the defence ministry also unveiled a slew of reform initiatives to make India a hub of manufacturing defence equipment and platforms.

It also approved procurement of a number of military platforms and weapons including light tanks, anti-ship missiles and long range guided bombs at a cost of Rs 84,328 crore to boost combat capabilities of the armed forces. The year also saw India ramping up overall defence cooperation with a number of leading countries including the US, France, the UK, Germany and Japan.

<https://economictimes.com/news/defence/india-enhanced-overall-military-capability-in-2022/articleshow/96660090.cms>



Fri, 30 Dec 2022

India's Quest for High-calibre Military UAVs is Still in its Infancy

By Manish Kumar Jha

India has a huge market for both civil and military drones. The global military drone market is projected to grow to \$30 billion by 2025. The military needs all categories of drones from micro to heavy, from hand-held to high-altitude. While the policy is shaping the building of indigenous capabilities, India still is falling short of developing military-grade drones of various categories.

So far, India has relied on Israeli and US drones, but manufacturing potential within the country in the public and private sectors is huge. To encourage the indigenous ecosystem, India has largely prohibited the import of drones. The import of drone components is exempted for domestic drone manufacturers to incentivise and boost investments. In fact, in November, the Indian Army issued a requirement for 363 drones for non-combat, multi-domain operational missions which can operate at high-altitude mountainous terrain across India. In the open tender, the Army clearly outlines that the drone system must have 60% indigenous material. A drone system is basically a drone with a ground control station and other essential sub-systems for imaging and processing. On the other front, India's sole research and development agency—DRDO—is building medium-altitude long-endurance unmanned aerial vehicles (MALE UAVs) with different configurations for the Indian Armed Forces. The need for such high endurance UAVs is not only required for robust Intelligence, Surveillance and Reconnaissance (ISR) but it is needed for anti-air defence with combat capabilities.

India is lagging behind in developing MALE- drones despite the fact that the country has achieved high ground in Information Technology (IT) which is fundamental to algorithm-based drones. In fact, several countries including Turkey, UAE and China have developed top military drones. Turkey has developed Bayraktar while UAE has come up with its versatile drone—Yabhon United 40. Closer home, China has already deployed its powerful military drones – CH-5 & Loong Wing II. Keeping that in mind, where does India stand in terms of manufacturing such high-calibre UAVs which can withstand the rigour and complex operational requirement of the Indian Armed Forces?

Tapas-BH-201 MALE drones

Tapas-BH-201 which was earlier known as Rustom-2 is a Medium Altitude Long Endurance (MALE) UAV. DRDO's Rustom II has been in the making for a long time. While there are many

breakthroughs in several areas the delays pose questions and uncertainty. In fact, the prototype development began as early as 2009. In its earlier avatar, Rustom-1 evolved from Burt Rutan's Long-EZ with a 250 km range, for visual and radar surveillance. It was to be a tactical UAV with the endurance of 12 hours and made its first flight in November 2009. Another version, Rustom-H, is a larger UAV with a flight endurance of over 24 hours.

Tapas has made good progress as it has been linked to satellite communications (SATCOM) and long-range electro-optical payload had been tested. Basically, it is linked to the indigenous GAGAN satellite. It passed through many automatic take-off (ATO) flight tests which were conducted in 2020. However, the engine issue remained as the requisite power thrust could not be achieved which is resolved now with the Lycoming for smaller variants and twin Russian NPO-Saturn 36MT engines. Parallely, DRDO is also working on a fully indigenous engine which is at the final stage of development according to officials from DRDO. Finally, Rustom II took flight hitting an altitude of 26,000 feet with an endurance of 18 hours. Further, the goal is to reach a 3000-km range, a service ceiling of 50,000 feet, with the ability to carry 3,000 kg weapon payload load. The payloads are still mostly sourced from Israel and include infrared (IR) sensors, synthetic aperture radar (SAR) and maritime patrol radars, electronic intelligence (ELINT) and communications intelligence (COMINT) packages.

Once the full spectrum of trials is completed, DRDO will hand over the technology to a public sector or a private aerospace partner for manufacturing. The export version is also planned.

Ghatak Autonomous UCAV

Ghatak is an unmanned combat air vehicle (UCAV) that is among the most futuristic projects of DRDO. The concept is similar to the Turkish TB2 Bayraktar missile-armed UAVs which have been deployed in the Russian-Ukraine war.

Ghatak is an autonomous stealthy UCAV that will be armed with missiles and precision-guided munitions. It will be a flying-wing design with an internal weapons bay and a turbofan engine. The prototype is expected in 2024-25.

Earlier, it was named Autonomous Unmanned Research Aircraft (AURA). The design of the Ghatak UCAV is carried out by Aeronautical Development Agency ADA located in Bangalore. The full-scale prototype of the Ghatak UCAV will be put under test by the end of 2025. The Indian Navy is also interested in procuring deck-based UCAVs for Aircraft Carriers and Landing Platform Docks. Stealth Wing Flying Testbed (SWiFT)

DRDO's SWiFT is a technology demonstrator of Ghatak UCAV. Basically, SWiFT is a "scaled-down version" of Ghatak which is under development. The main intent of the SWiFT UAV is to demonstrate and prove the stealth technology and high-speed landing technology in autonomous mode. In July 2022, it completed the taxi trials and the take-off and landing capabilities of SWiFT were demonstrated at the Aeronautical Test Range of the Aeronautical Development Establishment (ADE) at Challakere in Karnataka.

Netra autonomous UAV

Netra is a lightweight (1.5 kg), autonomous UAV for ISR, developed by DRDO and IdeaForge, a Mumbai-based private firm. This is the first such success story where a private player demonstrated capabilities for manufacturing military-grade drones. Netra UAV has been deployed over 700 systems including with the Indian Army, Navy, and Indian Air Force among others.

Ideaforge can produce 10 UAVs per month. Building upon the base model, a more advanced version is under development.

The success of Netra UAV has opened a plethora of opportunities for private players. However, the biggest challenge is the design and development of sensors along with hardware like motors and propellers. The armed forces require drones that are precision-based and offer weaponised solutions. UAVs are already taking shape as an important element of asymmetric warfare.

<https://www.financialexpress.com/defence/indias-quest-for-high-calibre-military-uavs-is-still-in-its-infancy/2931909/>

THE HINDU BusinessLine

Sun, 01 Jan 2023

Involve Defence Ministry while Drafting Policies on AI, Big Data for Telecommunication

The Ministry of Defence has asked the Telecom Regulatory Authority of India to involve the defence authorities while drafting policies and regulations for big data and analytics in the telecommunication space. Responding to TRAI's consultation process on 'Leveraging Artificial Intelligence and Big Data in Telecommunication Sector', the MoD said "the MoD in GOI should be involved in the same (the state's initiative to develop an AI strategy), so as to align the AI strategy to the security and data intelligence requirements of the arm forces".

The Defence Ministry also emphasised that every AI-based analytics on big data should be shared with appropriate stakeholders to enhance operational and internal security aspects. Furthermore, these protocols, set up by telecom stakeholders, should undergo regular audits by law enforcement agencies.

The Ministry raised concerns about cyber attacks on the networks of significant TSPs and ISPs in the sector. "The communication backbone of ISPs uses a plethora of network switching elements, hence, an increased risk of cyber attacks exists." Moreover, according to the MoD, the counter solutions in the telecom sector to respond to these attacks are usually reactive and cannot proactively respond to these cyber attacks efficiently. Given that armed forces also have a dependency on civil hired media, the MoD wants to use AI to analyse the networks used by armed forces to identify potential threats and malware.

The MoD also urged TRAI to use the vast amount of call data generated by the Indian telecom industry to strengthen internal security, especially in troubled areas. "The telecom industry generates and stores vast amounts of data in terms of call data records and network data. It also comprises of data related to customer profiles including mobility and device data, customer usage patterns and location data. The AI strategy should leverage this information to strengthen internal security, especially in troubled areas," said the ministry of defence.

<https://www.thehindubusinessline.com/info-tech/involve-defence-ministry-while-drafting-policies-on-ai-big-data-for-telecommunication/article66327157.ece>

Russia Defence Minister says Victory 'Inevitable' in New Year Message

Russian Defence Minister Sergei Shoigu said victory for Russia over Ukraine was "inevitable" as he hailed Russian soldiers' heroism in a New Year's video message. Moscow's defence chief, who has been heavily criticised by pro-war voices in Russia for battlefield failures during the 10-month campaign, said the situation on the frontlines remained "difficult" and lambasted Ukraine and the West for trying to contain Russia. "We meet the New Year in a difficult military-political situation," Shoigu said. "At a time when there are those who are trying to erase our glorious history and great achievements, demolish monuments to the victors over fascism, put war criminals on a pedestal, cancel and desecrate everything Russian."

With bloody fighting ongoing across the 1,000-km (600-mile) frontline, and Russia not having secured any territorial gains since the first months of the war, Shoigu told Russian soldiers: "Victory, like the New Year, is inevitable." Shoigu also praised the "immortal actions, selfless courage and heroism" shown by Russian troops fighting what he called "neo-Nazism and terrorism". Kyiv and the West have rejected Russia's assertion it is fighting "Nazis" in Ukraine as a baseless pretext for President Vladimir Putin's attempt to seize territory and topple Volodymyr Zelenskiy in a war of unprovoked aggression.

Moscow had expected swift victory in what it calls a "special military operation", but Ukraine's spirited resistance and billions of dollars of Western arms have helped Kyiv turn the tide of the war and mount a series of stunning counteroffensives. Ukraine has now reclaimed more than half of the territory seized by Russia during the first weeks of its invasion.

<https://www.hindustantimes.com/world-news/russia-defence-minister-says-victory-inevitable-in-new-year-message-101672481677446.html>

*Sun, 01 Jan 2023*

China Biggest Threat, India Top Most Ally – Japan's New National Security Strategy Explained & Analyzed

By KN Pandita

Nine years after Japan published its first National Security Strategy, now comes the second National Security Strategy, along with two more documents — National Defence Strategy and Defence Program Plan. In a significant shift from its long-time post-war pacifist approach, Japan

announced a \$320 billion plan for a military build-up, the biggest since the Second World War. Based on current budgets, this five-year plan will make the country the world's third-biggest military spender after the United States and China, a Reuters report said.

On December 16, Prime Minister Kishida Fumio's cabinet approved Japan's three key security documents. Addressing a news conference, Prime Minister Kishida said, "Every one of us must have the awareness that we are protecting our country. This is very important, as we have learned from Ukraine. We are now at a turning point of our national security policy," a Washington Post report quoted him saying.

Threat Perception

The significant change in the defense policy in Japan is necessitated by the threat perceptions that have been on a steady rise in the background of global changes and alignments.

The National Security Strategy has identified three sources of threat, namely China, North Korea, and Russia, in a priority sequence.

Identifying China as the topmost threat is very significant because till late Prime Minister Abe published his famous paper "Asia's Democratic Security Diamond" in 2013, Japanese governments hesitated to call China the top challenger to Japan.

Interestingly, the National Security Strategy and National Defence Strategy both documents also mention friends. At the top is Australia, second India, and third UK, France, Germany, and Italy or South Korea. South Korea had a higher status in the past.

India As Quad-4 Partner

In the case of India, late Prime Minister Abe laid a strong foundation for Indo-Japan solidarity. In the case of India, the two countries are planning joint fighter exercises.

There is also a possibility that India will import Japan's UNICORN for their naval ships. The defense ministries of both countries have already started a joint arms development project for unmanned vehicles.

Kishida cabinet's decision to give India the second status in the friendly hierarchy is significant because, after the demise of Abe, there was no leader in Japan's political hierarchy to understand and deal with India. India declining to sign the UN condemnation resolution against Russia also divided the two. But there were more serious developments affecting India and Japan. Japan asked for India's permission to transport planes of the Japan Self Defence Force carrying UN stocks to support Ukraine to land in India.

New Delhi did not give permission. Japan's Self Defence Force was deeply annoyed. It was a disappointment for Japan's security circles. Again, Japan tried to sell US-2 amphibious planes to the Indian Navy but without success. There was resentment in certain political circles. Why does India behave like that? But resentment or opposition notwithstanding, Kishida cabinet approved giving India the second position in the list of friendly countries. This speaks of the correct diplomatic vision of Japan's policy planners about the ground situation in the Indo-Pacific.

China is reported to have taken note of the potentiality of India's recently tested long-range missile. Japan's new security strategy has focused on seeking long-range missile strike capability.

Simultaneously, Australia, another member of Quad-4, is also seeking long-range missile technology. In July 2020, Australia announced its intent to possess long-range strike capability.

Also, Australia will be equipping its Navy with nuclear submarines with long-range cruise missiles under the AUKUS arrangement. India deployed a supersonic cruise missile in the India-China border area. India also tests missiles with hypersonic missile warheads.

China, as we know, is obsessed with territorial expansion. The long-range strike capability is effective and hence multi-beneficial for the Quad-4 members. Long-range is a strong deterrent to China's expansionist designs.

Long-Range Missile

Another critical aspect of the new security strategy of Japan is that it will increase Official Defence Assistance (ODA). The document says, "To deepen security cooperation with like-minded countries, apart from cooperation framework for the benefit of armed forces and other related organizations will be established." It means that "Japan will be a security provider for countries that face China's territorial expansion," writes the Economic Times on 30 December 2022. This is of much importance to India and also means strengthening the strike power of the Quad-4. Take again the case of Japan's US-2 amphibious planes, which India could not purchase because of their high price.

Under Japan's new security strategy, it should be possible for Japan to assist countries like India to beef up their strike power against aggression by China.

India is in confrontation with China in the border area of Ladakh and Arunachal Pradesh. Japan cannot provide support to India against China by drawing upon ODA because, under the rules, Japan cannot use ODA for military purposes. Under a new cooperation system, Japan would be able to provide India with road-building machines and other connected needs.

The US and UK both have hailed Japan's vision of militarily rising again as the Asian tiger. This is a pragmatic step in the direction of containing China's expansionist designs in more than one way. While India is facing China's aggressive posture on the land on the Ladakh border, Japan is being threatened by China through her naval power, particularly in such islands that have been historically under Japanese control.

India had understood the necessity of confronting China on its northern border after the war of 1962. China has been extending its shadow over the Himalayan border, be it Ladakh, Bhutan, or Arunachal Pradesh. At the same time, China has been sending her spy vessels into the Indian Ocean Region only to test the patience of the regional states. Keeping China's belligerent stance in mind, India felt the necessity of becoming a partner in the Quad-4.

Simultaneously India focused attention on independence and self-reliance in the production of war machinery. The atmanirbhar concept meaning self-reliant policy, was offered by Prime Minister Modi in 2014 when he assumed power. History has proved him right, and today, we can stop every aggression China may plan on the land or the sea.

<https://eurasianimes.com/china-biggest-threat-india-top-most-ally-japans-security-strategy/?amp>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 30 Dec 2022

Union Minister Dr Jitendra Singh Visits Indian Institute of Chemical Biology (IICB) in Kolkata and Urged the Director and Senior Scientists to Carry out Preventive Healthcare Research

The Minister says, Modi Government took several measures in the last 8 and half years to make Indian Healthcare future-ready

IICB has developed an oral vaccine for cholera, herbal products for controlling gastric ulcer, empirical treatment for vitiligo, diagnostic kits for malignancy and hormonal disorders and a device for early detection of Parkinson's disease: Dr Jitendra Singh

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today visited premier Kolkata institute founded in 1935, the Indian Institute of Chemical Biology (IICB) and urged the Director and senior scientists to carry out preventive healthcare research, with special focus on prevention of Metabolic Disorders like Type 2 Diabetes Mellitus in the young so that India's youth energy could be optimally channelised for nation building instead of letting go under-utilised on account of health issues.

Dr Jitendra Singh said that Healthcare has been one of the key focus areas of the Modi government since 2014, and he has taken several measures in the last 8 and half years to make Indian Healthcare future-ready. Dr Jitendra Singh underlined that there is a Paradigm Shift in approach as far Healthcare is concerned as the government is focusing on health as well as wellness, by eliminating the factors responsible for illness and making treatment of diseases inclusive.

Dr Jitendra Singh was happy to note that the Indian Institute of Chemical Biology (IICB) was established in 1935 as the first non-official centre in India for biomedical research and was included within the aegis of CSIR in 1956. He said, the institute continues to exploit its unique strength in Chemical biology for understanding various diseases to find out therapeutic solutions and the Process chemistry for generics is one of the priority areas in addition to novel drug development of various diseases.

Dr Jitendra Singh was happy to note that the institute has developed an oral vaccine for cholera, herbal products for controlling gastric ulcer, empirical treatment for vitiligo, diagnostic kits for

malignancy and hormonal disorders and a device for early detection of Parkinson's disease. He said, although the strength of CSIR-IICB has always been basic biomedical research, during the last 8 years emphasis is being given on goal-oriented research directed towards commercial exploitability. Dr Jitendra Singh also informed that although the CSIR-IICB was established to carry out research in infectious diseases like kala azar, cholera, malaria etc, but it has gradually transformed into a cutting age research institute in biomedical research with emphasis on basic understanding of the infectious diseases, immune system, cancer, metabolic diseases including cardiovascular diabetes and liver diseases.

Dr Jitendra Singh also lauded the role of IICB in joining the mission to fight Corona pandemic since the beginning of the crisis as it helped in covid testing, genome sequencing to convalescent plasma therapy trial. He said, IICB scientists are also taking a lead role in CSIR mission mode projects starting from drug development, drug repurposing to antiviral mission.

Dr Jitendra Singh said, CSIR-IICB today is engaged in research on diseases of national importance and biological problems of global interest, employing sophisticated state-of-the-art technology in keeping with the rapid and unprecedented momentum that life science research has gained globally over the last 50 years. The scientific staff has expertise in a variety of areas including chemistry, biochemistry, cell biology, molecular biology, neurobiology and immunology which promotes productive interdisciplinary interaction. IICB started its journey from a small house in central Calcutta (41, Dharmatala Street) as Indian Institute of Medical Research (IIMR) in 1935. It was founded by Dr. J. C Ray and his young clinicians colleagues like H.N. Ghosh, A.C. Ukil and Nabajiban Banerjee. The aim of the institute was to conduct research on biomedical sciences both in basic and applied aspects. There was a need to investigate health problem of the country.

It was the first non-official medical research Institution in India with a very small budget coming from private donations. Institute got strong support of eminent personalities like Rabindranath Tagore, Madan Mohan Malaviya, Sir C.V. Raman, Acharya P. C. Roy, Dr. Nilratan Sarkar and Dr. Bidhan Chandra Roy. Rabindranath Tagore appealed to the people "The establishment of such a well-conceived centre for medical research depends upon adequate donations and endowments received from the public. Let me entreat my fellow-countrymen for a ready response to this appeal for assistance for this institution that through their support they may make it a real success". Acharya P C Roy also requested wealthy people to generously respond and help the Institute.

Presently, CSIR-IICB has 2 campuses. The main campus is at Jadavpur and the second campus is situated at Salt Lake. The Salt Lake Campus was in February 2016.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1887549>



Press Information Bureau
Government of India

Ministry of Science & Technology

Sat, 31 Dec 2022

Union Minister Dr Jitendra Singh Inaugurates “Incubation Centre” at National Research Development Corporation (NRDC) Headquarters in Delhi to Provide Multi-dimensional Support to Start-Ups

The Minister was happy to note that NRDC has reoriented itself to become the only National level PSU, which is providing its services for taking the lab scale technologies developed by Public Funded Research Institutes (PFRI) to Industry

NRDC should aim to provide technology transfer services through hub and spoke model, specially to African and Asian Countries: Dr Jitendra Singh

Dr Jitendra Singh becomes the first Science and Technology Minister to visit the NRDC Headquarters in Delhi, since its inception in 1953: Amit Rastogi

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh inaugurated “Incubation Centre” at National Research Development Corporation (NRDC), Delhi to provide multi-prong support to StartUps.

Chairman and Managing Director NRDC, Commodore(Retd) Amit Rastogi and his entire team welcomed Dr Jitendra Singh and pointed out that he was the first ever Minister for Science and Technology who was visiting the NRDC headquarters at Delhi, since its inception in 1953. Dr Jitendra Singh was glad to note that after the Prime Minister Narendra Modi’s announcement of 'StartUp India, Stand-up India' from the ramparts of the Red fort on 15th August, 2015, NRDC had reoriented itself to become the only National level PSU, which is providing its services for taking the lab scale technologies developed by Public Funded Research Institutes (PFRI) to Industry. Dr Jitendra Singh pointed out that the Corporation is providing support to start-ups through its various activities like IP Filing support to StartUps, Incubation Support for nurturing Start-Ups through its incubators at NRDC HQ, CSIR-NAL and CSIR-IMMT, Technology Development fund, Seed Funding to early stage start-up, Association with DPIIT for recognising start-ups and finally Association with IOCL for mentoring & monitoring of start-ups.

Dr Jitendra Singh urged the Team NRDC to take a wholesome approach to establish a National level facility which should provide one-stop solution to all the needs of the ever growing Start-Ups ecosystem of the country. He said, it must house facilities like TRL assessment, IP exchange, Design clinic, Model Incubation facility etc. In order to find World market for Indian Technologies,

NRDC should aim to provide technology transfer services through hub and spoke model, specially to African and Asian Countries, the Minister added. Dr Jitendra Singh said, as PSU under DSIR, NRDC is focussed on securing and translating the IPR through various value addition activities carried out like Technology Evaluation, Basic Engineering, Market Surveys, etc. and providing its bit to make India truly “Atmanirbhar”.

Commodore(Retd) Amit Rastogi, in his presentation before the Minister informed that Uniphore, an Indian Unicorn and The Leader in Conversational AI & Automation received Funding of Rs 30 lakh and Technology support from NRDC in 2008. Shri Rastogi promised to DrJitendra Singh that he and his team will strive hard to make the Corporation one of the world’s best and leading organization for Technology Transfer.

NRDC has created the facilities for incubating start-ups and is also promoting beneficial schemes to provide support in terms of funding, mentoring, IP assistance and other allied services to the Start-ups. In the last one year, the Corporation has established three Incubation Centres and one Outreach Centre. Another Outreach Centre is planned for inauguration in January 2023 at Guwahati to promote start-ups in North East. 10,000 Start-ups have received support in respect of IP filing, Incubation and start-up registration so far. NRDC has further forayed into the domain of defence and nuclear technologies for civilian application. With an aim to support Made-in-India, NRDC has established Foreign collaboration with USPTO, AARDO etc. for exploring world market for Indian Technologies. Further, NRDC is proving to be a catalyst between R&D Institute & Industry and has signed MoU with 220 R&D Institute & Universities in last five years. NRDC has also proved its credentials and its Vizag unit was awarded “Best Technology” and “Innovation Support Centre” in 2021. With an aim to set-up National Technology Transfer Organization to provide one stop shop to StartUps and with setting up of International Marketing Division, NRDC is poised for grand scale up in future.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1887759>



**Press Information Bureau
Government of India**

Ministry of Science & Technology

Sun, 01 Jan 2023

Union Minister Dr Jitendra Singh Briefs Media about ‘2023 Science Vision’ at New Delhi

Union Minister Dr Jitendra Singh briefs media about ‘2023 Science Vision’ at New Delhi

The Minister says, Science, Technology and Innovation will define India@100 in 2047

To make India a global center of research and innovation in this Amrit Kaal, Science and Technology-related research must reach to the local level; Dr Jitendra Singh

In a media interaction on the first day of the New Year, Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS

PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today said, 2023 Science Vision will define India at 2047.

Dr Jitendra Singh added that the year 2023 also happens to be the first of the last 25 years or the last quarter of the calendar before independent India turns 100 at 2047 and realizes its century dreams.

This is also the year, the Minister said, when India under PM Narendra Modi reiterates its stature in the international fora as the host of G20 as well as the Nation on whose proposal the world is observing International Year of Millets. Dr Jitendra Singh said, “The future belongs to those who have innovative ideas and out-of-box goals, and have the conviction and courage to achieve the same. The Minister emphasized that today we have a Prime Minister, who not only thinks out of box, but inspires 130 Crore Indians to take decisions with courage of conviction.

Referring to Prime Minister Narendra Modi’s penchant for “Innovation”, Dr Jitendra Singh pointed out to his Independence Day address, where he had said, “Till today we always remember our revered Lal Bahadur Shastri ji for his inspirational clarion call of Jai Jawan Jai Kisan meaning “Hail the Soldier, Hail the Farmer”. Later Atal Bihari Vajpayee ji added a new link of Jai Vigyan which meant “hail science” and we gave it utmost importance. But in this new phase Amrit Kaal now it is imperative to add jai anusandhaan that is “hail innovation”. “Jai Jawan Jai Kisan Jai Vigyan Jai Anusandhaan.”

Dr Jitendra Singh underlined that in the Centre –State Science Conclave held in September, 2022 also, Modi had highlighted that in order to make India a global center of research and innovation in this Amrit Kaal, we have to work on many fronts simultaneously and stressed the need to take science and technology-related research to the local level. Departments dealing with Science and Technology have already outlined their focus and thrust areas for the year 2023.

ISRO, after the opening up of Space Sector to private participants on the intervention of PM Modi, today has more than 100 StartUps in a short span of time. At the same time, its focus is on scientific exploration missions, Technology Demonstration missions and Human spaceflight programme “Gaganyaan” in 2024.

The department of Biotechnology (DBT) would take forward the successes of COVID-19 vaccine mission by investing in improvement of vaccines for the existing and emerging diseases. Significantly, major missions would also be launched on millets and patho-genomics of plant viruses in the International Year of Millets.

CSIR in 2023 will also focus on Green Hydrogen as it has already made a headway in Green Hydrogen indigenous as part of clean energy mission. The Ministry of Earth Sciences (MoES) will focus on Deep Sea mission & technologies which will add value to India’s economy in the years to come. 2023 will also witness further headway in Blue Economy. Significantly, PM Modi referred to Deep Ocean Mission twice in his Independence Day address, first in 2021 and then again in 2022.

Department of Atomic Energy, DAE in its contribution to India’s Electoral Management will deliver about 21.00 lakh equipment for the Election Commission of India which includes Ballot Units (BU), Control Units(CU) and Voter Verifiable Paper Audit Trail (VVPAT) to be completed by ECIL by Sept/Oct 2023.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1887872>

Tissue-Specific Immunity may be the Future: Research

Recent push to increase vaccine effectiveness has sparked numerous novel immunological findings, exposing numerous paradigms with unrealized therapeutic potential. Tissue-resident memory T cells (TRM cells), an immune cell type that offers long-lasting defence against pathogens attacking particular organs and tissues, are the subject of one expanding area of research.

Researchers from the University of California San Diego School of Medicine revealed a previously underappreciated complexity of TRM cell biology in the gut in a new study that was published on December 28, 2022, in *Immunity*. This finding may inspire a new generation of precision therapeutics against infection, cancer, and autoimmune disease.

The immune system leaves behind memory T cells after an infection, which keeps a long-lasting molecular memory of the pathogen and is prepared to raise the alarm if it ever reappears. While some memory T cells are created to circulate throughout the bloodstream and offer total body defence, others live in certain organs and are trained to combat viruses that specifically target those organs. These TRM cells can give the target tissue lifelong immunity, but if overactivated, they can potentially lead to autoimmune disorders.

“TRM cells are the first responders, right at the front lines of infection,” said senior author John T. Chang, MD, professor at UC San Diego School of Medicine. “Most of our vaccines are designed to provide systemic immunity, but we may be able to get even better protection by instead focusing on boosting the tissue-specific cells that encounter the pathogen first.”

For example, a respiratory virus may be best fought by strengthening TRM cells in the nose and lungs, and a pathogenic gut microbe best treated by enhancing TRM cells in the intestines. Thus the goal is to develop therapeutics that could boost the formation and maintenance of TRM cells, or in the case of autoimmune disease, remove the immune cells by disrupting these same pathways.

The issue is, scientists still have a lot to learn about what helps TRM cells form and survive, and these rules may be quite different in each tissue type.

To explore this, the researchers performed a series of experiments to characterize TRM cells in mice from four different compartments of the gut: two organs (the small intestine and the colon) and two different tissue layers in each (the intraepithelial and lamina propria layers).

The experiments revealed that TRM cells in each tissue type exhibited distinct patterns of cytokine and granzyme expression, along with substantial transcriptional, epigenetic and functional heterogeneity. In other words, the same type of immune cells in each part of the gut appeared to be very different in their molecular makeup, function and chemical signals they depend on.

Reinforcing this further, each population of cells also showed differential dependence on Eomesodermin (Eomes), a transcriptional factor known to affect TRM cell development. Eomes was canonically thought to repress TRM cells based on previous data collected from the skin, liver and kidney, but the new experiments revealed the opposite was true in the small intestine. There,

Eomes proved to be surprisingly important in the survival of TRM cells. However, this was not the case in the colon, highlighting the high context-specificity even within the gut.

Future research will continue to define the rules of TRM cell formation and maintenance in other tissues and explore what drives their specificity. For example, the authors suggest that differences in the microbiome of the small intestine and the colon may contribute to the unique needs of their TRM cells, so manipulating the microbiome may be another approach to regulating immune cells in the gut.

“In the future, we want to be thinking about vaccines and other therapeutics that are tailored to the specific needs of each organ,” said Chang. “By knowing what each tissue type needs to support the formation and maintenance of TRM cells, we can provide the most efficient immune defences against disease.”

<https://theprint.in/health/tissue-specific-immunity-may-be-the-future-research/1290955/>

