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DRDO News

DRDO Technology News

 **FINANCIAL EXPRESS**  
Read to Lead

*Mon, 14 Nov 2022*

## **DRDO Operationalised First Avalanche Radar in North-East Himalaya**

DRDO has successfully installed an Avalanche Radar, which is claimed to be a first of its kind in India. The radar is capable of monitoring critical avalanche prone slopes even during inclement weather. Defence Geoinformatics Research Establishment (DGRE), Chandigarh led the research initiative to develop critical technologies for enhancing combat effectiveness and safe movement of troops in all kinds of terrain with a focus on avalanches and landslides. Snow avalanches have now become a regular phenomenon in the mountains. It poses direct threat to people and infrastructure during winter. According to the officials from DGRE, the successful detection of snow avalanches by active sensors at the initial phase of avalanching provides valuable time, which can be utilised to warn people for effective road closure and save lives.

DGRE also collaborated with 33 Corps of the Indian Army to jointly conduct the installation and launch of the state-of-the-art Doppler Avalanche Radar at an altitude of 15000 ft in North Sikkim region. As per the information from DGRE, it involved an Indian Industry partner. It can detect avalanches within a few seconds of its initial and generate various types of alarms thus providing valuable and timely input to save human lives. In addition, radar operates at distance and thus permits large areas to be monitored without the need to install instruments in dangerous zones. Integrated cameras on the radar mast will help record videos of the event.

<https://www.financialexpress.com/defence/drdo-operationalised-first-avalanche-radar-in-north-east-himalaya/2812074/lite/>



**Press Information Bureau**  
**Government of India**

*Ministry of Defence*

*Mon, 14 Nov 2022*

### **Judicious Use of Financial Resources with Quick & Transparent Decision Making Key to Armed Forces Combat Readiness: Raksha Mantri to Defence Accounts Department during Controllers' Conference in New Delhi**

**Shri Rajnath Singh calls to further develop IT capabilities; bolster internal vigilance mechanism & enhance workforce skills for better results**

Raksha Mantri Shri Rajnath Singh has exhorted Defence Accounts Department (DAD) to ensure judicious use of financial resources through quick & transparent decision making, terming it as the key to strengthen the combat readiness of the Armed Forces. Inaugurating the two-day Controllers' Conference of DAD in New Delhi on November 14, 2022, the Raksha Mantri described the officials of the department as the sentinels of the defence finance system who play their part in nation building by managing the allotted funds with financial prudence. The DAD handles the budget allocated to Ministry of Defence (MoD), which translates into pay and allowances of personnel, payment to pensioners, processing of financial advice cases for various procurements and processing of first & third party claims, apart from the other auxiliary activities, including internal audit function. In Union Budget 2022-23, MoD has been allocated a total budget of Rs 5.25 lakh crore, including Rs 1.19 lakh crore for pensions.

The agenda points of the conference include Public Finance Management: Towards a system of faceless transactions; IFA System: An aid to effective decision making; Efficiency & Performance Audit: From Compliance to Assurance Framework; Improving Service Delivery; Challenges in Human Resource Management and Sustaining Major IT systems developed by the DAD. Shri Rajnath Singh laid special emphasis on ensuring timely payments to beneficiaries, *i.e.*, soldiers, pensioners and third parties. He hoped that the session on '*Public Finance Management: Towards a system of faceless transactions*' will pave the way for transparency in defence financial transactions. He exuded confidence that the conference will further improve the services of the DAD; bring transparency in its working and strengthen Human Resource Management.

The session on 'Efficiency of IFA system: An aid to effective decision making' will introduce financial advisors with the latest delegation of financial powers. The Raksha Mantri said, the session will help the advisors understand the issues related to delegation of financial powers and decision making. He stressed that domain expertise coupled with a sensitive understanding of client needs is essential for providing timely financial advice. He urged the controllers to function with the mindset of a collaborator and work for the benefit of both parties. Shri Rajnath Singh called upon the DAD to further develop its IT capabilities & financial knowledge; bolster the internal vigilance mechanism and enhance the skills of its workforce to more efficiently discharge its duties. "If there is a doubt in the working of any officer, it should be reviewed immediately. Complaints should be settled immediately. If grievances are pending, provision should be made for their weekly or monthly audit and action should be taken," he said.

On the occasion, the Raksha Mantri released a stamp and a special cover envelope commemorating 275 years of the DAD. The inaugural session was attended by Chief of Defence Staff General Anil Chauhan, Chief of Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar, Defence Secretary Shri Giridhar Aramane, Secretary, Department of Ex-Servicemen Welfare Shri Vijoy Kumar Singh, Financial Advisor (Defence Services) Smt Rasika Chaube and Chief Post Master General Ms Manju Kumar. The conference - organised periodically every two-three years - provides DAD and MoD with a platform to take stock of various issues, deliberate and arrive at sustainable solutions. It is witnessing the participation of over 100 Principal Controllers of Defence Accounts (PCDAs)/Controllers of Defence Accounts (CDAs)/Integrated Financial Advisers (IFAs) from across the country this year.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1875776>



*Mon, 14 Nov 2022*

## **Rajnath Singh Says Funds Cleared for Brahmos Unit in Lucknow**

Defence minister Rajnath Singh on Monday said funds have recently been sanctioned for the BrahMos Missile Aerospace cruise missile manufacturing unit in Lucknow. "The country's defence exports that were worth about Rs. 900 crore in 2014 are now around Rs. 18,000 crore. Our Prime Minister Narendra Modi says that we must boost country's defence production and become a major exporter. Only recently Rs. 385 crore has been sanctioned for the BrahMos Missile Aerospace cruise manufacturing unit that has been inaugurated in Lucknow," Singh said soon after he arrived in his Lucknow Lok Sabha constituency on a three-day visit on Monday evening. The defence minister, during his previous visit, had said due to PM Modi's 'Make in India' pitch, the defence exports would touch Rs. 40,000 crore to Rs. 50,000 crore by 2025.

"Instead of arriving by a separate plane, the raksha mantri arrived by a regular passenger flight, interacting with the people on way to Lucknow," BJP leaders said. Soon after his arrival, Singh got busy interacting with the people of his constituency, assuring them that efforts were on to develop Lucknow as one of the top cities of the country. "The outer ring road project is coming

up fast. Various flyovers have been constructed and more are coming up to decongest the roads of the state capital. Expansion, beautification and upgradation of various railway stations in the state capital, including Charbagh and Gomtinagar, is underway,” he said. During his visit, Rajnath is also scheduled to visit Manaknagar satellite railway station, where also construction is underway. “This time, instead of big public meetings, (there will be) people-to-people connect programmes and interactions so that I can get to know from you all, your suggestions on various aspects,” Rajnath Singh later said at a function in Mahanagar.

His next two days in Lucknow, too, are dotted with various people-connect campaigns, which would see him interact with various resident welfare committee associations. After seeking people’s suggestions, Rajnath spoke of how the country under Prime Minister Narendra Modi had now become a powerful global voice. “You must have seen how during the Covid surge, the country developed indigenous vaccine that helped millions. The efforts made by the government for the people during Covid surge elicited praise from one and all, including World Health Organisation (WHO). As on date, 135 crore people in India have received three doses of Covid vaccine,” he said.

Rajnath also visited the 95-year-old patron of the Gomtinagar Jan Kalyan Samiti (Gomtinagar residents’ committee), Yagya Dutt Sharma, at his Vipul Khand residence to wish him on his birthday. “Rajnathji offered him sweets on his birthday,” said BJP leader Praveen Garg, adding that deputy chief minister Brajesh Pathak, UP BJP MLC and Lucknow party chief Mukesh Sharma were among those present on the occasion.

<https://www.hindustantimes.com/cities/lucknow-news/rajnath-singh-says-funds-cleared-for-brahmos-unit-in-lucknow-101668448121560.html>



*Mon, 14 Nov 2022*

## **Defence Minister Rajnath Singh Urges Judicious Use of Financial Resources to Strengthen Combat Readiness of Armed Forces**

Defence Minister Rajnath Singh today, November 14, urged Defence Accounts Department to ensure judicious use of financial resources through quick and transparent decision-making as it is key to strengthening combat readiness of armed forces. He was speaking at the Controllers’ Conference organised by Defence Accounts Department in New Delhi. He said there is a need for the Department to initiate a process of reforms within itself related to IT capabilities, financial knowledge and other key areas. Mr. Singh also emphasised strengthening the internal vigilance mechanism. He stressed the need for timely payment to all the beneficiaries of payment services including soldiers, pensioners and third parties and quick resolution of their problems.

<https://newsonair.com/2022/11/14/defence-minister-rajnath-singh-urges-judicious-use-of-financial-resources-to-strengthen-combat-readiness-of-armed-forces/>



**Press Information Bureau  
Government of India**

*Ministry of Defence*

*Mon, 14 Nov 2022*

## **Third Edition of Largest Nationwide Coastal Defence Exercise ‘Sea Vigil-22’ Commences**

The third edition of the ‘Pan-India’ Coastal Defence Exercise ‘Sea Vigil-22’ will be conducted on 15-16 Nov 22. This National Level Coastal Defence Exercise was conceptualised in 2018 to validate various measures that have been instituted towards enhancing maritime security since ‘26/11’. Coastal Security being a major sub-set of Coastal Defence construct, the concept of ‘Sea Vigil’ is to activate the Coastal Security apparatus *across India* and assess the overarching Coastal Defence mechanism. The exercise will be undertaken along the entire 7516 km coastline and Exclusive Economic Zone of India and will involve all the Coastal States and Union territories along with other maritime stakeholders, including the fishing and coastal communities. The exercise is being conducted by the Indian Navy in coordination with the Coast Guard and other ministries entrusted with the task of maritime activities.

The scale and conceptual expanse of the exercise is unprecedented in terms of the geographical extent, the number of stakeholders involved, the number of units participating and in terms of the objectives to be met. The exercise is a build up towards the major Theatre Level Readiness Operational Exercise (TROPEX), which the Indian Navy conducts every two years. *Sea Vigil* and TROPEX together will cover the entire spectrum Maritime Security challenges. Assets of the Indian Navy, Coast Guard, Customs and other maritime agencies will participate in *Ex Sea Vigil*. In addition to the Ministry of Defence, the conduct of this exercise is also being facilitated by the Ministries of Home Affairs, Ports Shipping and Waterways, Petroleum and Natural Gas, Fisheries Animal Husbandry and Dairying, Customs, and other agencies of Centre/ State.

While smaller scale exercises are conducted in Coastal States regularly, including combined exercises amongst adjoining states, the conduct of exercise *Sea Vigil* at the national level is aimed to serve a larger purpose. It provides opportunity, at the apex level, to assess our preparedness in the domain of Maritime Security and Coastal Defence. Exercise *Sea Vigil-22* will provide realistic assessment of our strengths and weaknesses and thus will help in further strengthening Maritime and National Security.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1875879>

## India to Conduct Major 'Sea Vigil' Coastal Defence Exercise

India on Tuesday will kick off the major 'Sea Vigil' coastal defence exercise, with all maritime stakeholders led by the Navy and Coast Guard swinging into action along the country's entire 7,516-km coastline including island territories and the two million sq km Exclusive Economic Zone. "The scale and conceptual expanse of the two-day exercise is unprecedented in terms of the geographical extent, the number of stakeholders involved, the number of units participating and in terms of the objectives to be met," Navy spokesperson commander Vivek Madhwal said on Monday. This will be the third edition of the 'pan-India' Sea Vigil coastal defence exercise 'Sea Vigil-22', which was conceptualised in 2018 to validate various measures that have been instituted towards enhancing maritime security since the 26/11 terror strikes in Mumbai in 2008. The Sea Vigil exercise will also be a build up towards the major theatre-level readiness operational exercise (Tropex), which the Navy conducts every two years. "Sea Vigil and Tropex together will cover the entire spectrum of maritime security challenges," commander Madhwal said. Sea Vigil will involve all the coastal states and UTs along with other maritime stakeholders, including the fishing and coastal communities.

In addition to the defence ministry, the conduct of this exercise is also being facilitated by the ministries and departments of home affairs, shipping and waterways, petroleum and natural gas, fisheries, animal husbandry, customs and others. The exercise will provide an opportunity at the apex level to assess the country's preparedness in the domain of maritime security and coastal defence, with a realistic assessment of strengths and weaknesses. The 26/11 carnage in Mumbai, in particular, had exposed the lack of "critical connectivity" between intelligence agencies and security agencies. Though there were some intelligence inputs about fishing vessel Kuber trying to infiltrate through the sea route at that time, it had slipped through the cracks to allow Ajmal Kasab and nine other terrorists to reach Mumbai and unleash mayhem.

<https://timesofindia.indiatimes.com/india/india-to-conduct-major-sea-vigil-coastal-defence-exercise/articleshow/95511426.cms>



## Exercise Sea Vigil 2022: Two-Day Mega Military Exercise Begins on Tuesday

To enhance India's maritime security, India will begin the third edition of the Sea Vigil maritime exercise on Tuesday. The two-day long multi-exercise will cover the 7,516 km-long coastline of the country. Along with covering India's coastline, the exercise will also take place in the exclusive economic zone. With the collaborative participation of the Indian Navy, Coast Guard, Customs department, and other maritime agencies, Sea Vigil will help in validating the maritime security mechanism. The first edition of the Sea Vigil Exercise was held in 2019. The scale and



conceptual expanse of the 'Sea Vigil' exercise is "unprecedented" in terms of the geographical extent, the number of stakeholders involved, the number of units participating and the objectives to be met, officials told PTI.

Sea Vigil will also help in preparing for the major Theatre Level Readiness Operational Exercise (TROPEX), which the Indian Navy conducts every two years. The two exercises, Sea Vigil and TROPEX, will together cover the spectrum of maritime security challenges. The exercise was conceptualised in 2018 to assess the various security measures that were taken to enhance maritime security after the Mumbai terror attack in 2008. Since the ghastly terror attack, the Indian Navy and the Coast Guard have taken a series of measures to strengthen India's coastal security after the Mumbai terror attack which killed more than 100 people including foreign nationals from 10 nations. The Ministry of Defence is not the only facilitator in the exercise, as it is also being coordinated by the ministries of home affairs, shipping and waterways, petroleum and natural gas, fisheries animal husbandry and dairying, customs, and other agencies concerned with the central and state governments.

Exercise Sea Vigil-2022 will provide an opportunity, at the apex level, to evaluate India's maritime preparedness for any kind of invasion or terrorist attack done in the domain of Maritime Security and Coastal Defence. It will also provide a realistic insight of India's strengths and weaknesses to ensure further strengthening of maritime and national security. Unlike the small-scale exercises that cover a portion of coastal area or states, the Sea Vigil exercise is a combined effort that is conducted at the national level to serve a larger purpose.

<https://www.livemint.com/news/india/exercise-sea-vigil-2022-india-s-two-day-mega-military-exercise-begins-on-tuesday-indian-navy-11668429524619.html>



*Mon, 14 Nov 2022*

## **Indian Army Primed for Indigenous Modernisation, Says Vice Chief of Army Staff**

The Indian Army is poised for indigenous modernisation and it has recognised the importance of the private sector in defence manufacturing, Vice Chief of Army Staff, Lieutenant General B S Raju said on Monday. He was addressing a function marking the inauguration of a Regional Technology Node (RTN-B) of the Army Design Bureau (ADB) at ASC Centre & College, Bengaluru. "Indian Army has recognised the importance of private sector in defence manufacturing. We want participation of the private sector," Lt Gen Raju said. He said 25% of defence R&D budget is meant to go for local industry. "We will be transparent in our dealing. We will provide you the products and their required number to you to produce along with deadline," he said. "We shall give you ample opportunity to grow," Lt Gen Raju told the industry.

According to him, the government has decided not to import 400 products and that they should be manufactured locally. "Indian Army is poised for modernisation in the next 10 years. When I say modernisation, I mean indigenous modernisation," he said. RTN-B will leverage the location of ASC Centre and College in Bengaluru to build an interface with trade, industry and

academia with specific focus on IT, to coordinate advancements in technology for overall benefit of Indian Army on behalf of ADB and HQ ARTRAC (Army Training Command), a defence statement had said earlier. "ADB is one of India's milestone projects under the Indian Army's Make-in-India initiative in defence sector," it said. The role of the ADB, established in 2016, is to conduct technology scans, identify technologies for acquisition and development, and facilitate R&D efforts with industry, academia, Defence Public Sector Undertakings (DPSUs) and the Defence Research and Development Organisation (DRDO).

The intention is to provide inputs and enable them to understand user requirements while initiating design and development cases with aim to promote indigenisation. To further exploit the success of this model, it was visualised to have similar formal structures at regional level to further extend the outreach and enhance assimilation of technology in the Indian Army, it was stated. Regional Technology Node – Pune (RTN-P) was the first regional level node set up under ADB to act as an interface with the industry in Maharashtra region. One of the major initiatives undertaken by the ADB is the publication of Compendiums of 'Problem Definition Statements' that identified the core issues of concern for the Indian Army.

<https://www.thehindu.com/news/national/indian-army-primed-for-indigenous-modernisation-vice-chief-of-army-staff/article66135285.ece>



*Mon, 14 Nov 2022*

## **Army Chief on 4-Day Visit to France: To Strengthen Bilateral Defence Ties**

Indian Army Chief General Manoj Pande has embarked on a 4-day visit to France from November 14 to 17. In an attempt to further bolster India-France defence ties, the Army Chief will hold meetings with his counterparts and senior military leadership. During the visit, the Chief of Army Staff will lay a wreath at the Neuve Chapelle Indian Memorial. The memorial honours the 4,742 Indian soldiers who gave their lives in the First World War. The COAS is also expected to interact with the Chief of the Defence Staff, the Chief of the Army Staff and other senior military leaders. "He is scheduled to call on the Chief of the Defence Staff, Chief of the Army Staff, and Commander Commandement des Forces Terrestres (CFT) / Command of the Land Combat Forces, where he will discuss avenues for enhancing India-France defence relations," read a statement by Ministry of Defence.

### **What's more in Army Chief's itinerary?**

The Army Chief will also visit various military training establishments at Ecole Militaire in Paris. He is also scheduled to address the Senior Staff Officers attending a course at Ecole de Guerra-T. Additionally, he will pay a visit to the Military Schools at Draguignan, which are renowned institutions for training both commissioned and non-commissioned officers. COAS Manoj Pande's 4-day visit to France will focus on further strengthening the bonds of trust and understanding between the two armies. Recently, the bilateral air exercise Garuda VII between the Air Forces of India and France culminated on November 12. The air exercise which began on

October 26, witnessed the participation of various aircraft and helicopters. Exercise Garuda also serves as a platform for enhancing bilateral defence ties between both nations.

<https://newsonair.com/2022/11/14/army-chief-on-4-day-visit-to-france-to-strengthen-bilateral-defence-ties/>

## Outlook

*Sun, 13 Nov 2022*

### **How can the Private Sector Help India become a Net Defence Exporter?**

At the recent DefExpo-2022, Prime Minister Narendra Modi had said that India is set to become a major defence equipment manufacturer despite the global monopoly of a few companies. He was hinting at India's aim to become net exporter of defence technology and equipment. At the curtain raiser for the event, Defence Minister Rajnath Singh had set the export target for 2025 at Rs 35,000 crore. Both the top leaders had mentioned that private sector has an important role to play in achieving these targets. However, before delving into the ways in which the private defence companies can contribute, it is important to assess the overall situation of India's defence procurement and where it stands in comparison to the leading arms exporting nation in the world.

#### **Where India's Defence Procurement Stands**

Despite having the second largest military force in the world, a key concern for the defence sector in India has been its import-dependence. According to a report published by Stockholm International Peace Research Institute (SIPRI), India emerged as the second largest defence importer during the 2012-16 period. In the subsequent period from 2017 to 2021, India went on to become the largest importer. This is certainly a problem for the nation that seeks to attain 'Aatmanirbharta' (self-reliance) in terms of defence. Globally, the US enjoys a very comfortable first position when it comes to defence exports. It is way ahead of its competition, thanks to the fact that the leading private arms manufacturers of the world – Lockheed Martin, Boeing, Northrop Grumman and Raytheon Technologies – are based in the US. On the other hand, India is placed at the 23rd position in the SIPRI arms transfer report 2022.

Of late, India seems to be learning from the private-led manufacture-cum-export model in the US. It was only in 2001 that India's defence sector was fully opened up for private players. So far, over 300 private companies have received industrial licenses and more than 100 of them have commenced large scale production as well. The sector also allows for 100 per cent foreign direct investment (FDI) via the government route while the FDI is capped at 74 per cent for companies seeking new licenses through the automatic route. In the past few years, there have been several initiatives from the Indian government to encourage increased manufacturing from the private sector.

## Incentivising Indigenisation

An important initiative from the government's end is the positive indigenisation list— a list of defence requirements that will be exclusively procured from indigenous sources. “The promulgation of ‘positive list’ is a major policy measure that actually shows the intent of the government,” says Sunil Misra, Director General of Society of Indian Defence Manufacturers. He adds, “The combination of cerebral asset of India, conducive policy environment, risk-taking ability of entrepreneurs and capable manufacturing sector will herald a scenario where private sector in defence space will play a major role.”

<https://www.outlookindia.com/business/how-can-the-private-sector-help-india-become-a-net-defence-exporter--news-237152>

**Firstpost.**

Mon, 14 Nov 2022

## India a Step Closer to Getting its Fifth-Generation Aircraft: What is this Advanced Fighter and Why We Need it?

India’s plan to get a fifth-generation fighter jet is slowly turning into reality. On 8 October, India Air Force Day, Air Chief Marshal Vivek Ram Chaudhari had said that work on the fifth-generation fighter aircraft program called the Advanced Medium Combat Aircraft had progressed and induction of the AMCA was likely to commence 2035 onwards. India’s need for a fifth-generation aircraft has intensified in recent times owing to the growing strength of Chinese and Pakistani air forces. Here’s a better understanding of what exactly is a fifth-generation aircraft, its features and where India stands on the development of this fighter jet.

	F-22 RAPTOR	F-35 LIGHTNING II	J-20	SUKHOI SU-57
Length	18.90 m	15.6 m	20.4 m	22 m
Max Speed	Mach 1.8	Mach 1.6	Mach 2	Mach 2
Empty Weight	19,700 kg	14,650 kg	19,400 kg	18,000 kg
Service entry	2005	2015	2017	2019

### What’s a fifth-generation aircraft?

In layman’s language, the fifth-generation aircraft is one that includes major technologies developed during the first part of the 21st century. They are considered to be the most advanced fighters in operation. Defence experts state that there is no defined features of this type of aircraft and is considered to be a step above the current planes. They are designed to operate with the

help of digital programs and fly-by-wire to counter the threats they counter on the battlefield. In the minds of most, it's stealth that primarily sets fifth-generation fighters apart from their predecessors. Unlike the fourth generation jets that were provided some limited stealth capabilities, evading detection is an intrinsic part of fifth-generation fighter design.

Other elements that are often touted as fifth-generation specific include advanced avionic systems, multirole capabilities, and the ability to "supercruise," or fly at supersonic speeds without having to engage afterburners. Lockheed Martin, the company behind America's F-22 Raptor — a fifth-generation aircraft, describes the fighter jet as having all-aspect stealth even when armed, Low Probability of Intercept Radar (LPIR), high-performance airframes, advanced avionics features, and highly integrated computer systems capable of networking with other elements within the theatre of war for situational awareness.

### **Which countries have fifth-gen fighters?**

As of now, there are only three countries that have designed and built fifth-generation aircraft: the United States, China and Russia. The US undertook the Advance Tactical Fighter program in the mid-1980s. In 2005, the first fifth generation fighter jet the Lockheed Martin F-22 Raptor was introduced by the United States Air Force (USAF). The F-22 Raptor is single-pilot operated and is highly manoeuvrable stealth-featuring fighter equipped with state-of-the-art weapons and electronics. It has supercruise at Mach 1.8, which means it can fly at Mach 1.8 without the use of afterburners. Even though, the US has the F-22 Raptor, it began another fifth generation fighter – The F-35 Lightning II in 2015. Designed and built by Lockheed Martin, the aircraft is similar to the F-22 in terms of stealth and having top modern weapons. There are three variants, F-35A, F-35B and F-35C. The US operates all the three variants. Italy, Japan and South Korea operate the F-35A and F-35B. Australia, Belgium, Denmark, The Netherlands, Norway and Poland operate the F-35A.

The other country that has displayed its capability in building a fight-gen aircraft is China with its Chengdu J20 aircraft. Manufactured by Sichuan province-based Chengdu Aircraft Industry Group, the plane also known as the 'Mighty Dragon', is a twinjet all-weather stealth and is considered to be China's most advanced fighter jet. Russia's fifth-gen fighter jet known as Sukhoi Su-57 was introduced into service in 2019. A single- seater jet, it is armed with air-to-air, air-to-ground, anti-ship as well as anti-radiation missiles. Other countries such as South Korea and Turkey are also developing their own fifth-generation aircraft. According to reports, at least 40 of South Korea's KAI KF-X is to be delivered by 2028 and a total of 120 aircraft is to be deployed by 2032. Turkey is expected to induct its TAI TF-X planes by 2030.

### **What about India's fifth-gen aircraft?**

India's plan for a fifth-generation fighter has long been in the pipeline. Known as the Advanced Medium Combat Aircraft programme (AMCA), the idea for India to design and manufacture such an aircraft took flight in 2010. India's fifth-gen aircraft is to be produced by a public-private joint venture between the Defence Research and Development Organisation (DRDO) and Hindustan Aeronautics Limited (HAL). The development cost is estimated to be around Rs 15,000 crore. As recently as 3 November, it was reported that the Critical Design Review (CDR) process for the same is slated for December. Following this, the project requires the approval from the Cabinet Committee on Security (CCS). AMCA project director AK Ghosh was quoted by news agency *PTI* as saying that once the project sanction is received, the prototype would be

rolled out in three years. “The first flight can be expected in one to one-and-a-half year after that,” Ghosh was quoted as saying.

By this estimate, India’s first 5th-gen fighter jet prototype will take flight by 2028. The AMCA will be a 25-tonne, twin-engine stealth fighter jet with an internal weapons bay. In fact, Ghosh was quoted as saying that the AMCA will be comparable to other global fifth generation fighter jets. Moreover, the AMCA will also include a Divertless Supersonic Intake, which has been produced in India for the first time, as per a report by *The Hindu*. The internal weapons bay, which will have a 1500-kg payload, 5500-kg external payload and 6500-kg internal fuel capacity, can reduce the aircraft’s radar cross-section (RCS). A low RCS is crucial for stealth aircraft as its radar signature will be more difficult for radar operators and other assets to identify, track and engage.

### **Why is AMCA crucial for India?**

The AMCA programme is very important to India for multiple reasons. Firstly, it will help the Indian Air Force that is currently grappling with just 30-32 fighter squadrons, against the sanctioned strength of 42 squadrons. Its development is also important as India faces a number of rising threats — China and Pakistan continue to up its own security arsenal and India can’t afford to sit back. Additionally, the AMCA project will boost India’s defence creation capability and prove to the world that the nation is not dependent on others for its security. The project will give a thrust to Prime Minister Narendra Modi’s ‘Make in India’ idea, which had received great impetus from the induction of India’s first indigenous aircraft carrier, INS Vikrant, in September and the indigenously developed Light Combat Helicopters (LCH), now called Prachand in October.

<https://www.firstpost.com/explainers/india-fifth-generation-aircraft-importance-and-significance-11623671.html>

## **THE TIMES OF INDIA**

*Mon, 14 Nov 2022*

### **Army will Showcase Desi Products to Foreign Delegations, Give FCs: Vice Chief**

Vice Chief of Army Staff (VCOAS) Lt Gen BS Raju on Monday said that as part of encouraging private Indian defence industry the Indian Army would showcase indigenous products and technologies to visiting delegations and also issue certificates to boost confidence among foreign partners. “...Annually more than 40-50 foreign delegations come visiting and I’d like to assure the industry that we will showcase your products to them. Also, we would like to issue certificates of fitness for your products which we feel are useful and that should give confidence to our foreign partners to buy products that you are manufacturing,” Raju said at the inauguration of the Regional Technology Node Bengaluru (RTN-B) at the ASC Centre and College in Bengaluru. He added that the Army would also like to place some initial orders as and when the industry has some products that are useful.

This he said would allow the Army to experiment, use them in real field conditions and give industry feedback so they improve. Arguing that self-reliance needs no emphasis, he said, it has been specifically proven in the aftermath of the Russia-Ukraine war and the peculiar situation that we in India are in as a consequence of that. “Self-reliance is no more a buzzword, it has become part of the reality and is not only important from the point of view of meeting our urgent needs but it has also become an important component of our national comprehensive plan. In the last few decades we’ve made reasonable progress on multiple fronts as far as the defence industry is concerned, but there’s still some way to go before we can call ourselves a reasonable power in the defence manufacturing sector,” he said. Future wars, he said, would be fought in multiple domains using complex but intelligent systems like swarm drones, unmanned ground vehicles, missiles with adaptive guidance and robotic systems.

“The writing on the wall is clear that future wars will be fought in multiple domains using complex but intelligent systems... At the centre of all this will be artificial intelligence, computer algorithms that can perform multiple functions including decision making. And all of these will have a large quantum of computing power. We are talking of capabilities that can be exerted by the human mind being done by machines, which is a quantum change,” he said. The Army’s modernisation plans in the next 10-15 years would need a more active role from the private industry, he said, adding that the government has realised that they need to open up and move away from just R&D from DRDO or defence PSUs. “We are at an inflection point where the need for the private sector is very evident and we are sure the industry will come onboard... Make-in-India and other initiatives have changed the way the defence sector looks at the future. They’ve been given further impetus in all the activity the Indian Army is doing,” he said.

“There’s a clear endeavour from within the armed forces to ensure that we become self-reliant in defence manufacturing. We have the army design bureau, whose primary task is to engage and collaborate with industry and academia to ensure full visibility of what the army needs and what the industry is capable of,” he said, adding that RTN-B, is in that direction. He assured the defence industry that the Army would give every opportunity to grow and to compete fairly. He reiterated that the Army has identified more than 400 products, which it has committed not to import.

“This is a clear signal to the local industry for investment and manufacturing as there’s a ready market within the armed forces. Another major initiative is earmarking 25% of the defence R&D budget for the private sector. The announcement has been made and we hope to see the implementation soon. This is a game-changing decision by the government to move away from exclusive dependence on DRDO or the DPSUs for research. As this manifests on ground, we will see a unique ecosystem in the country,” Raju said. Further, as part of emergency procurement — the Centre has allowed it for the fourth time — the Army plans to buy more than 80 products each with a value of around Rs 200 crore to Rs 300 crore.

“These orders will be placed within the next three-four months and the industry is expected to deliver the same within the next year after that. We are expecting the industry to come on board and deliver products within time. We expect you to rapidly absorb technology and produce the goods whenever you go in for joint production or joint venture either with DRDO or foreign partners,” he added. The RTN-B which is part of the Army Design Bureau (ADB), MoD said, will leverage ASC Centre and College’s location (Bengaluru) to interface with trade, industry and academia with specific focus on IT, to coordinate advancements in technology for overall benefit of the Indian Army. ADB’s role is to conduct technology scans, identify technologies for

acquisition and development, and facilitate R&D efforts with industry, academia, Defence Public Sector Undertakings (DPSUs) and DRDO.

<https://timesofindia.indiatimes.com/india/army-will-showcase-desi-products-to-foreign-delegations-give-fcs-vice-chief/articleshow/95505275.cms>

# ThePrint

*Mon, 14 Nov 2022*

## **Artillery to Rocket Launchers — Armenia Turns to India to Beef up Defence Against Azerbaijan**

Armenia has turned to India to beef up its defences with the purchase of an artillery system amid continuing tensions with Azerbaijan, a close ally of Pakistan and Turkey. Over the last two months, Armenia has procured anti-tank missiles and multi-barrel rocket launchers, among other types of munitions, from India in the wake of a Russia-negotiated truce preceded by fighting over control of the Nagorno-Karabakh region. The latest equipment on Armenia's shopping list is the mounted 155mm 39-calibre artillery system manufactured by Bharat Forge, a private defence firm part of Pune-based conglomerate Kalyani Group. This will be the first artillery order for Kalyani Group — the maker of multiple indigenous gun systems yet to be procured by the Army.

While the Kalyani Group maintains that the USD 155 million (over Rs 1,200 crore) order is for a “non-conflict zone”, sources in the defence establishment have now identified Armenia as the buyer. The gun systems will be manufactured at Kalyani Group's facility in Pune and delivered to the buyer in phases over the next three years. But this is not the first time Armenia has bought Indian defence systems. In September this year, Yerevan signed a government-to-government contract with New Delhi for the indigenous Pinaka multi-barrel rocket launchers, anti-tank missiles and ammunition.

Armenian Defence minister Suren Papiqyan even met his Indian counterpart Rajnath Singh on the sidelines of the DefExpo held in Gandhinagar last month, looking to expand defence cooperation with India. ThePrint had reported then that Armenia was eyeing more defence deals with India including procurement of drones, counter-drone measures and loitering munitions, besides mid-range surface-to-air missile (SAM) systems like the Akash developed by the Defence Research and Development Organisation (DRDO). The ex-Soviet republic had bought four indigenous ‘Swathi’ weapon-locating radars from India in 2020, which were delivered in the backdrop of its renewed conflict with Azerbaijan.

Revisiting the conflict, Armenian Prime Minister Nikol Pashinian Monday accused Azerbaijan of “shooting civilians” doing farm work in Nagorno-Karabakh.

### **Azerbaijan-Turkey-Pakistan axis**

The Government of India has been wary of speaking on defence cooperation with Armenia owing to the former Soviet republic's strained ties with Azerbaijan, seen by many as part of an emerging axis alongside Turkey and Pakistan. Observers have pointed out that, despite their



physical distance, an “indirect linkage” has emerged between Armenia-Azerbaijan and India-Pakistan in recent years. In 2017, Turkey, Azerbaijan, and Pakistan issued a joint statement establishing security cooperation and building further on previous bilateral military aid arrangements. Azerbaijan later deployed Turkish drones in the 44-day war against Armenia in 2020, and is believed to be in talks with Pakistan to buy the JF-17 fighter aircraft.

In September 2021, the three countries also launched an eight-day joint military drill that came to be known as the “Three Brothers” exercise. Incidentally, Pakistan was the second country after Turkey to recognize Azerbaijan as an independent state on 12 December, 1991. The regional trio is important in the sense that it will “add a military component to the political ties”, Soner Cagaptay, director of the Turkish Program at the Washington Institute, was quoted as saying by *Arab News* in 2021. In the Baku Declaration signed last year, the speakers of the Turkish, Azerbaijani and Pakistani parliaments agreed to support each other’s territorial integrity, while underlining their respective priorities. The declaration was an expression of overt support for Azerbaijan’s campaign in Karabakh, Pakistan’s claims in Jammu and Kashmir, and Turkey’s standpoint vis-à-vis the Cyprus, Aegean and East Mediterranean disputes.

<https://theprint.in/defence/artillery-to-rocket-launchers-armenia-turns-to-india-to-beef-up-defence-against-azerbaijan/1215570/?amp=>

## THE TIMES OF INDIA

*Mon, 14 Nov 2022*

### **PM Modi Arrives in Indonesia for G20 Summit, Receives Traditional Welcome**

Prime Minister Narendra Modi reached Bali in Indonesia on Monday to participate in the 17th G20 Leaders' Summit. The Prime Minister received a traditional welcome as he arrived in Bali. Members of the Indian diaspora also accorded him a warm welcome. The Summit will witness extensive discussions on pressing global challenges. President of Indonesia Joko Widodo will hand over the G20 Presidency to India at the closing ceremony of the Bali Summit. India will officially assume the G20 Presidency from December 1, 2022. During the visit, the Prime Minister will also extend his personal invitation to G20 Members and other invitees to G20 Summit next year. In his departure statement ahead of the visit, the Prime Minister said he will have extensive discussions with other G20 Leaders on key issues of global concern, such as reviving global growth, food and energy security, environment, health, and digital transformation. He will meet with leaders of several other participating countries on the sidelines of the G20 Summit and review the progress in India's bilateral relations with them. The Prime Minister will also address the Indian community in Bali at a Reception on November 15, 2022.

During his interactions at the G20 Summit, the Prime Minister will highlight India's achievements, and its unwavering commitment to collectively address global challenges. India's G20 Presidency will be grounded in the theme "Vasudhaiva Kutumbakam" or "One Earth One Family One Future", which underlines the message of equitable growth and shared future for all. The Bali Summit, slated for November 15-16, comprises three working sessions at the leaders' level. At a special press briefing on Sunday, Foreign Secretary Vinay Kwatra said G20 deliberations have acquired a greater

salience in the current global economic and political context He said that the world is currently struggling with many important challenges coming on top of the existing environmental challenges, lack of progress in the Sustainable Development Goals (SDGs) and the pandemic. "These include uneven post-pandemic economic recovery, debt vulnerabilities especially in the countries of the global south, the ongoing conflict in Europe, and its knock-on effects, such as food security challenges, energy crisis and inflation on all countries of the world," Kwatra said.

<https://timesofindia.indiatimes.com/india/pm-modi-arrives-in-indonesia-for-g20-summit-receives-traditional-welcome/articleshow/95514860.cms>

# The Tribune

*Mon, 14 Nov 2022*

## **Turkey-Uzbek Defence Pact will Upset India's Central Asia Plan**

After becoming another Dubai in promoting anti-India influence operations in Kashmir, Turkey may soon pose another headache for Indian strategists with its forays in Central Asia. In addition to being at odds with each other on Kashmir, Turkey and India are supporting opposite sides in the conflict between Azerbaijan and Armenia. Turkey's inking of a broad-based military framework agreement with Uzbekistan, the most populous and strategically situated of the five Central Asian countries, could become another irritant in their bilateral relations because it will bring Pakistan in the wake. Ankara's increased security and defence proximity with Tashkent would rub against India's attempt to promote a partnership with Uzbekistan to utilise Iran's India-run Chabahar port for trade in Afghanistan and Central Asia. Chabahar is merely 200 km from the Gwadar port at the tail-end of the China-Pakistan Economic Corridor which Pakistan is trying to promote.

Turkey and Pakistan have been moving on the world stage in tandem, as has been seen by their similar sounding statements on Kashmir. External Affairs Minister S Jaishankar had hit back after Erdogan had weighed in on Kashmir during his speech at the UN General Assembly's segment in September. The Turkish-Pakistani solidarity on Kashmir has been bolstered by their partnership in militarily backing Azerbaijan in its war on Armenia which, on the other hand, is supported by India and Russia. Indian planners will be forced to recalculate if Turkey manages to operationalise its defence agreement with Uzbekistan, especially in the areas of intelligence sharing, joint exercises, training and logistics cooperation. Two intelligence reports had last year pointed out Turkish influence operations in the subcontinent as it seeks a greater footprint among Muslims beyond West Asia. The defence agreement with Uzbekistan, apprehend sources, is part of that desire but it has the probability of catering to the interest of its sole regional ally Pakistan as well.

### **Might reconsider options**

- The defence pact will upset India's plan to promote a partnership with Uzbekistan to utilise Chabahar port

- India trades with Afghanistan and Central Asia via Chabahar port, bypassing Pakistan; the port is 200 km from Gwadar
- India will be forced to reconsider its options if Turkey manages to operationalise its agreement with Uzbekistan

#### **Mega naval exercise to start today**

- The Indian Navy will conduct a coastal defence exercise ‘Sea Vigil 2022’ on Nov 15 and 16
- The naval exercise involving all stakeholders, states and central govt agencies will set the tempo of the operations
- The aim is to check preparedness of various agencies to deal with any eventuality and bolster overall maritime security
- It will involve all 13 coastal states and Union Territories along with other maritime stakeholders
- 7,516 km coastline and exclusive economic zone of India to be covered

<https://www.tribuneindia.com/news/nation/turkey-uzbek-defence-pact-will-upset-indias-central-asia-plan-450987>



*Mon, 14 Nov 2022*

## **MiG-31 Armed with Kinzhal Missile Spotted over Belarus; Russia Orders more Hypersonic Weapons Amid Ukraine War**

Citing the “Belarusian Hajun Project” Telegram channel, the report stated that a MiG-31 with the number RF-92339 was flying over Belarus and carrying a hypersonic missile. A photograph was subsequently released as evidence of the aircraft over Minsk. While the MiG-31s armed with Kinzhal missiles remain reportedly deployed in Belarus, Russia’s Defense Ministry has meanwhile ordered an additional batch of Tsirkon (Zircon) hypersonic missiles, as reported by the state news agency TASS. “As reported earlier, the first contract to produce a batch of Tsirkons was signed in the summer of 2021. An additional contract – this fall,” the report said, citing an anonymous source close to the military agency.”

According to the report, the additional contract includes several dozen missiles and is expected to be completed in 2023. This becomes significant given that Russia has used hypersonic missiles against Ukraine in the ongoing war and has recently deployed hypersonic missiles to neighboring Belarus. It is also noteworthy that the contract for additional hypersonic missiles comes just days after it was announced that Russia has developed and manufactured a mobile launcher for a coastal version of the Zircon missile. So far, only the aviation and sea-based variants of the Tsirkon are known to exist. The missile can reportedly

evade the most sophisticated American air defense systems. “A prototype of a mobile launcher for a coastal missile system with a Zircon hypersonic missile has already been created. As in the case of the Bastion missile defense system, the launcher will carry two missiles,” a source close to the Russian military department told TASS.”

<https://eurasianimes.com/russia-orders-additional-hypersonic-missiles-as-mig-31s-armed-with-kinzhals/>



*Mon, 14 Nov 2022*

## **Russia’s Hypersonic Missile: Hype or a Message?**

The deployment and a contract for additional hypersonic missiles come at a time when Russian troops withdrew from Kherson after their recent military debacle. However, Ukraine’s intelligence has warned about Russia’s withdrawal, saying it could be a “trap.” A spokesman for the Ukrainian Air Force, Colonel Yuriy Ihnat, went so far as to warn that Russia may use the upcoming G20 summit in Indonesia as a pretext to attack Ukraine. Ihnat pointed out that Russia has a history of employing “provocations around such days.” Russia has three hypersonic weapons in its arsenal – the Avangard, the Kinzhal, and the Tsirkon. The Kinzhal or Dagger missile has been its weapon of choice in combat and deterrence against its western rivals. Russia has reportedly sent MiG-31s armed with Kinzhals to Belarus in the past two months.

On October 16, 2022, six Russian MiG-31K combat aircraft armed with Kinzhal missiles were spotted over Minsk. Four days later, on October 20, 2022, one MiG-31K armed with Kinzhal reportedly took off from Machulyshchi air base in Belarus. At the onset of November, the UK Ministry of Defense (MoD) tweeted that MiG-31 Foxhounds were almost certainly deployed to Belarus and were armed with the “Killjoy” hypersonic missiles. Killjoy is a NATO codename for the Kinzhal missile that can reportedly attain a speed of Mach 12 in flight. You can read our analysis of the deployment here. The MiG-31K and Kinzhal missile systems make up the most lethal and effective combination of conventional weaponry in the Russian arsenal. Even the best-defended targets in Europe and the UK are at risk due to their deployment in Belarus. Russia has ensured that the West is aware of these ‘hypersonic deployments’ by ditching secrecy.

It has potentially been trying to send a message of deterrence to the West by flying MiG-31Ks equipped with a Kinzhal missile over cities during the day and allowing Western satellites to get a clear look at what may be the next Russian step. On their part, top US defense officials claim that since the start of the conflict, Russian forces have launched “multiple” hypersonic missiles into Ukraine. In March, a Pentagon defense official said Russia had used 10 to 12 missiles to attack Ukraine. In addition to being able to fly at a speed of 3,800 mph or more than five times the speed of sound, hypersonic missiles can also take complex trajectories. No

defense system in Ukraine can intercept hypersonic missiles, giving Russia an added advantage.

Order of additional Tsirkon missiles that a mobile launcher can launch comes when Ukrainian and Western intelligence officials have claimed that Moscow has exhausted most of its modern, cutting-edge missiles. The intelligence officials maintain that this shortfall is why they have turned to Iran for help with kamikaze drones and ballistic missiles.

<https://eurasianimes.com/russia-orders-additional-hypersonic-missiles-as-mig-31s-armed-with-kinzhals/>

**DefenseNews**

*Tue, 15 Nov 2022*

## **US Army Awards Lockheed \$500M Deal to Replenish Rockets Stockpile**

The U.S. Army has awarded Lockheed Martin a deal worth \$521 million to replenish U.S. stocks of Guided Multiple Launch Rocket Systems, which were supplied to Ukraine to beat back Russia's invasion. The service on Oct. 21 and Nov. 2 issued contracts funded by Congress' supplemental appropriation to support Ukraine. "These awards demonstrate the significant impact GMLRS are having on the battlefield as a vital combat capability for our international partners," William LaPlante, the under secretary of defense for acquisition and sustainment, said in a Nov. 14 statement. "They are great examples of contracting approaches we are using to more rapidly accelerate award timelines and ultimately deliver capability."

Last month, Army acquisition chief Doug Bush told Defense News the Army is using multiple methods to accelerate contracts that will replenish supplies heading to Ukraine. Bush said in the Nov. 14 statement the Army remains "committed to getting things on contract as quickly as possible to ensure our stocks are rapidly replenished." Lockheed Martin also won a \$179 million contract earlier this fall to replace High Mobility Artillery Rocket Systems, or HIMARS, that are also being sent to Ukraine, along with an order of GMLRS.

As of October, the U.S. military has made roughly \$3.4 billion in Ukraine-related contracting actions for arms and equipment. Last month, Lockheed announced it plans to increase its HIMARS and GMLRS production by nearly 60%. In September, Ukraine also announced its plan to buy 18 HIMARS, in addition to the 20 systems the U.S. has sent to the country.

<https://www.defensenews.com/land/2022/11/14/army-awards-lockheed-500m-deal-to-replenish-rockets-stockpile/>



*Mon, 14 Nov 2022*

## **Military Committee Discusses Deterrence and Defence Posture at Supreme Headquarters Allied Powers Europe**

The NATO Military Committee conducted an Away Day at the Supreme Headquarters Allied Powers Europe (SHAPE) in Mons. The NATO Military Representatives gathered, together with key leadership of ACO, to discuss the way ahead for the Alliance's adaptation towards collective defence. Chair of the NATO Military Committee, Admiral Bauer, opened the day, expressing words of appreciation for the work done so far in a drastically changed security situation on NATO's doorstep. During the last 30 years, we were primarily focused on wars and missions of choice. In the recent period, we have been working more and more on plans to collectively defend the Alliance. We understand the complexity of the topics as we incorporate new concepts, new domains", he said, highlighting the need for creating understanding and support for the plans, and making sure required forces and command and control structures. Welcoming the Military Committee, Supreme Allied Commander Europe (SACEUR) General Christopher Cavoli provided an in-depth overview of the DDA Family of Plans, the delineation of the roles and responsibilities of the Joint Force Commands and the Component Commands, insight on the current force posture challenges and his principles and thoughts for the Command and Control structure way forward. General Cavoli described DDA implementation as the Alliance's return to collective defence.

"Enablement of SACEUR's Area of Responsibility is an essential component of DDA and NWCC, and will remain a substantial element of the Strategic Commanders' NATO 2030 requirements as endorsed at the Madrid Summit", reiterated Admiral Bauer in his final remarks. Maintaining a credible deterrence and an effective defence are the key focus points in the upcoming months. Overall, the Away Day offered an opportunity to reiterate the importance of leveraging interdependencies and synergies amongst Deterrence and Defence strands, as the complexity of challenges faced by NATO intensify and as the Alliance looks at the upcoming Vilnius Summit in 2023.

[https://www.nato.int/cps/en/natohq/news\\_209048.htm](https://www.nato.int/cps/en/natohq/news_209048.htm)

# बीपी घटाने और सस्ते पैड जैसे आइडिया को सम्मान

■ एनबीटी, नई दिल्ली

उनके पास ऐसे आइडिया हैं जो दुनिया को बदल सकते हैं। इन्होंने सैमसंग के सॉल्व फॉर टुमॉरो प्रोग्राम के टॉप 3 विनर्स में जगह बनाई। अब इन्हें आईआईटी दिल्ली में छह महीने के इन्क्यूबेशन के साथ एक करोड़ रुपये की ग्रांट मिलेगी।

स्पुतनिक ब्रेन यानी ऐसी डिवाइस जिसे पहन लें तो टेंशन कम हो जाए। ऐसा ब्रेन मॉड्यूलेशन की मदद से होता। बेंगलुरु के शंकर श्रीनिवासन इस डिवाइस से ऐसा केमिकल फ्री तरीका लाना चाहते हैं जो हाइपरटेंशन का बिना टेबलेट इलाज बने। वह डॉक्टरों, इंजीनियरों, न्यूरोसाइंटिस्ट के साथ आइडिया को क्रॉस चेक कर रहे हैं। पोर्ट ब्लेयर और दिल्ली की टीम से प्रिशा दुबे, अनुप्रिया नायक और वनालिका कोंवर की टीम चीनी कारखानों में उत्पादित गन्ने की खोई का उपयोग करके इको फ्रेंडली,

सस्ते और धोने लायक सैनिटरी पैड विकसित कर रहे हैं। तीनों मासिक धर्म से जुड़े सामाजिक कलंक को खत्म करना चाहती हैं। हैदराबाद के हेमेश चडालवाड़ा ने अलजाइमर रोगियों की निगरानी और उनके व्यवहार में बदलाव के बारे में परिजनों को सचेत करने के लिए एक स्मार्ट रिस्टबैंड विकसित किया है।

विजेता टीमों का चयन दिल्ली में सॉल्व फॉर टुमॉरो ग्रैंड फिनाले इवेंट में किया गया था। इस साल जून में, सॉल्व फॉर टुमॉरो के हिस्से के रूप में सैमसंग ने भारत में 16-22 साल के युवाओं को शिक्षा, पर्यावरण, हेल्थ केयर और कृषि में इनोवेटिव आइडियाज के साथ आमंत्रित किया था।

केन कांग, प्रेसिडेंट और सीईओ, सैमसंग साउथवेस्ट एशिया ने कहा कि हम उनके विचारों को अमल में लाने और लोगों के जीवन को बदलने के लिए उनके साथ काम करेंगे।

## **Russian Software Disguised as American Finds its Way into US. Army, CDC Apps**

Thousands of Smartphone applications in Apple and Google's online stores contain computer code developed by a technology company, Pushwoosh that presents itself as based in the United States, but is actually Russian, Reuters has found. The Centers for Disease Control and Prevention (CDC), the United States' main agency for fighting major health threats, said it had been deceived into believing Pushwoosh was based in the US capital. After learning about its Russian roots from Reuters, it removed Pushwoosh software from seven public-facing apps, citing security concerns. The US Army said it had removed an app containing Pushwoosh code in March because of the same concerns.

That app was used by soldiers at one of the country's main combat training bases. According to company documents publicly filed in Russia and reviewed by Reuters, Pushwoosh is headquartered in the Siberian town of Novosibirsk, where it is registered as a software company that also carries out data processing. It employs around 40 people and reported revenue of 143,270,000 rubles (\$2.4 mln) last year. Pushwoosh is registered with the Russian government to pay taxes in Russia. On social media and in US regulatory filings, however, it presents itself as a US company, based at various times in California, Maryland and Washington, D.C., Reuters found. Pushwoosh provides code and data processing support for software developers, enabling them to profile the online activity of Smartphone app users and send tailor-made push notifications from Pushwoosh servers. On its website, Pushwoosh says it does not collect sensitive information, and Reuters found no evidence Pushwoosh mishandled user data.

Russian authorities, however, have compelled local companies to hand over user data to domestic security agencies. Pushwoosh's founder, Max Konev, told Reuters in a September email that the company had not tried to mask its Russian origins. "I am proud to be Russian and I would never hide this." He said the company "has no connection with the Russian government of any kind" and stores its data in the United States and Germany. Cyber security experts said storing data overseas would not prevent Russian intelligence agencies from compelling a Russian firm to cede access to that data, however. Russia, whose ties with the West have deteriorated since its takeover of the Crimean Peninsula in 2014 and its invasion of Ukraine this year, is a global leader in hacking and cyber-espionage, spying on foreign governments and industries to seek competitive advantage, according to Western officials.

### **Huge Database**

Pushwoosh code was installed in the apps of a wide array of international companies, influential non-profits and government agencies from global consumer goods company Unilever Plc and the Union of European Football Associations (UEFA) to the politically powerful US gun lobby, the National Rifle Association (NRA), and Britain's Labour Party. Pushwoosh's business with US government agencies and private companies could violate contracting and US Federal Trade Commission (FTC) laws or trigger sanctions, 10 legal experts told Reuters. The FBI, US Treasury and the FTC declined to comment. Jessica Rich, former director of the FTC's Bureau of Consumer



Protection, said "this type of case falls right within the authority of the FTC," which cracks down on unfair or deceptive practices affecting US consumers. Washington could choose to impose sanctions on Pushwoosh and has broad authority to do so, sanctions experts said, including possibly through a 2021 executive order that gives the United States the ability to target Russia's technology sector over malicious cyber activity.

Pushwoosh code has been embedded into almost 8,000 apps in the Google and Apple app stores, according to Appfigures, an app intelligence website. Pushwoosh's website says it has more than 2.3 billion devices listed in its database. "Pushwoosh collects user data including precise geolocation, on sensitive and governmental apps, which could allow for invasive tracking at scale," said Jerome Dangu, co-founder of Confiant, a firm that tracks misuse of data collected in online advertising supply chains. "We haven't found any clear sign of deceptive or malicious intent in Pushwoosh's activity, which certainly doesn't diminish the risk of having app data leaking to Russia," he added. Google said privacy was a "huge focus" for the company but did not respond to requests for comment about Pushwoosh. Apple said it takes user trust and safety seriously but similarly declined to answer questions.

Keir Giles, a Russia expert at London think tank Chatham House, said despite international sanctions on Russia, a "substantial number" of Russian companies were still trading abroad and collecting people's personal data. Given Russia's domestic security laws, "it shouldn't be a surprise that with or without direct links to Russian state espionage campaigns, firms that handle data will be keen to play down their Russian roots," he said.

**'Security issues'** After Reuters raised Pushwoosh's Russian links with the CDC, the health agency removed the code from its apps because "the company presents a potential security concern," spokesperson Kristen Nordlund said. "CDC believed Pushwoosh was a company based in the Washington, D.C. area," Nordlund said in a statement. The belief was based on "representations" made by the company, she said, without elaborating. The CDC apps that contained Pushwoosh code included the agency's main app and others set up to share information on a wide range of health concerns. One was for doctors treating sexually transmitted diseases. While the CDC also used the company's notifications for health matters such as COVID, the agency said it "did not share user data with Pushwoosh." The Army told Reuters it removed an app containing Pushwoosh in March, citing "security issues." It did not say how widely the app, which was an information portal for use at its National Training Center (NTC) in California, had been used by troops.

The NTC is a major battle training center in the Mojave Desert for pre-deployment soldiers, meaning a data breach there could reveal upcoming overseas troop movements. US Army spokesperson Bryce Dubee said the Army had suffered no "operational loss of data," adding that the app did not connect to the Army network. Some large companies and organizations including UEFA and Unilever said third parties set up the apps for them, or they thought they were hiring a US company. "We don't have a direct relationship with Pushwoosh," Unilever said in a statement, adding that Pushwoosh was removed from one of its apps "some time ago." UEFA said its contract with Pushwoosh was "with a US company." UEFA declined to say if it knew of Pushwoosh's Russian ties but said it was reviewing its relationship with the company after being contacted by Reuters.

The NRA said its contract with the company ended last year, and it was "not aware of any issues." Britain's Labour Party did not respond to requests for comment. "The data Pushwoosh collects is similar to data that could be collected by Facebook, Google or Amazon, but the difference is that all

the Pushwoosh data in the US is sent to servers controlled by a company (Pushwoosh) in Russia," said Zach Edwards, a security researcher, who first spotted the prevalence of Pushwoosh code while working for Internet Safety Labs, a nonprofit organization. Roskomnadzor, Russia's state communications regulator, did not respond to a request from Reuters for comment.

### **Fake address, Fake Profiles**

In US regulatory filings and on social media, Pushwoosh never mentions its Russian links. The company lists "Washington, D.C." as its location on Twitter and claims its office address as a house in the suburb of Kensington, Maryland, according to its latest US Corporation filings submitted to Delaware's secretary of state. It also lists the Maryland address on its Facebook and LinkedIn profiles. The Kensington house is the home of a Russian friend of Konev's who spoke to a Reuter's journalist on condition of anonymity. He said he had nothing to do with Pushwoosh and had only agreed to allow Konev to use his address to receive mail. Konev said Pushwoosh had begun using the Maryland address to "receive business correspondence" during the coronavirus pandemic. He said he now operates Pushwoosh from Thailand but provided no evidence that it is registered there. Reuters could not find a company by that name in the Thai company registry.

Pushwoosh never mentioned it was Russian-based in eight annual filings in the US state of Delaware, where it is registered, an omission which could violate state law. Instead, Pushwoosh listed an address in Union City, California as its principal place of business from 2014 to 2016. That address does not exist, according to Union City officials. Pushwoosh used LinkedIn accounts purportedly belonging to two Washington, D.C.-based executives named Mary Brown and Noah O'Shea to solicit sales. But neither Brown nor O'Shea are real people, Reuters found. The one belonging to Brown was actually of an Austria-based dance teacher, taken by a photographer in Moscow, who told Reuters she had no idea how it ended up on the site. Konev acknowledged the accounts were not genuine. He said Pushwoosh hired a marketing agency in 2018 to create them in an attempt to use social media to sell Pushwoosh, not to mask the company's Russian origins. LinkedIn said it had removed the accounts after being alerted by Reuters.

<https://timesofindia.indiatimes.com/world/us/russian-software-disguised-as-american-finds-its-way-into-us-army-cdc-apps/articleshow/95514638.cms>



*Mon, 14 Nov 2022*

## **Vikram-S, India's First Private Rocket all set for Launch Tomorrow**

Vikram-S, India's first privately developed rocket is all set to launch from the Indian Space Research Organisation (ISRO)'s launchpad at Sriharikota tomorrow, Tuesday, November 15. This move will provide a favorable environment to private players in the space sector. India's first private rocket, Vikram-S, is developed by a Hyderabad-based startup Skyroot Aerospace. The rocket will be launched on a sub-orbital mission, named as Prarambh, with three payloads. Skyroot Aerospace CEO and co-founder Pawan Kumar Chandana informed the news agency PTI that the launch will take place at 11.30 am tomorrow.

Apart from being the nation's first private launch, it will also be the maiden mission of Skyroot Aerospace, named 'Prarambh', and will carry a total of three payloads in space. Out of them, two will be Indian customers and one will be foreign customers. "Heartbeats quicken. All gazes are up to the sky. The earth is listening. It all points to 15 Nov 2022 for launch," Sky space Aerospace told PTI on Friday.

### **How Prarambh mission will impact India's private space sector?**

The successful launch of the mission will make Skyroot the first private space company to launch a rocket in space from India. This will pave way for the growth of India's private space sector which was opened in 2020. Since then, the country has been trying to attract private space companies to launch rockets from India. The name of the launch vehicles of Skyroot are kept 'Vikram' as a mark to pay tribute to the founder of the Indian Indian space programme and renowned scientist Vikram Sarabhai. Skyroot Company was the first startup to enter into a memorandum of understanding with ISRO for launching its rockets.

As per PTI reports, the ultimate aim of opening the space sector for private companies in India is to provide a conducive environment for cost-efficient satellite launch services by disrupting the entry barriers. This will help these companies in advancing their mission and make spaceflights affordable, reliable and regular for all.

<https://www.livemint.com/news/india/vikrams-india-s-first-private-rocket-all-set-for-launch-tomorrow-11668388683742.html>

