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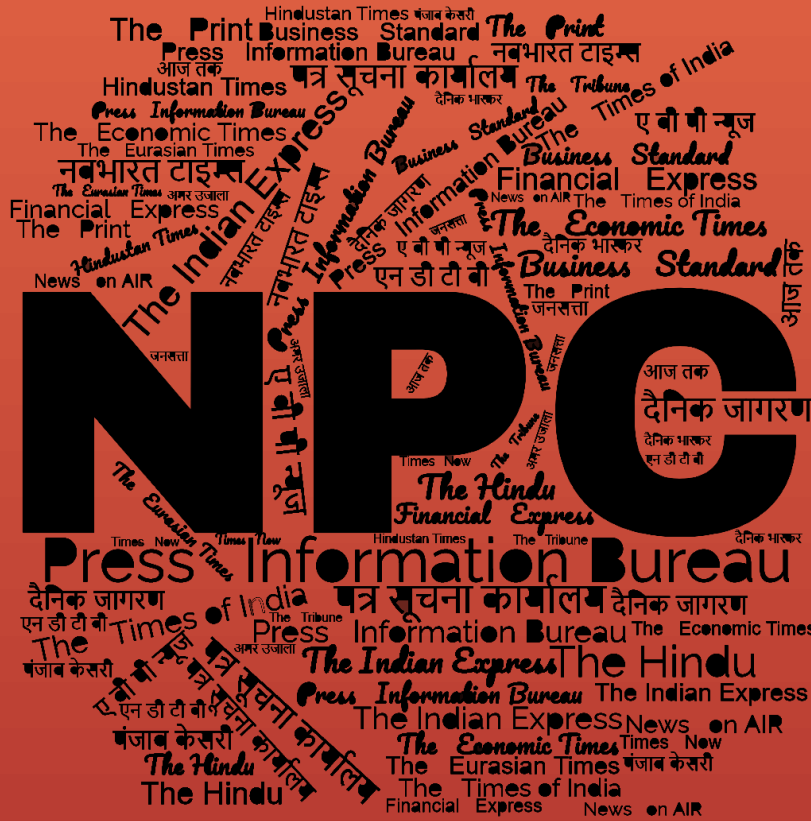
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# समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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# CONTENTS

S. No.	TITLE	Page No.
	<b>DRDO News</b>	<b>1</b>
	<b>DRDO Technology News</b>	<b>1</b>
1.	भारत के SMART मिसाइल का दम... आसमान से, पानी से कहीं से भी हो सकेगा हमला... कन्फ्यूज हो जाएगी दुश्मन सेना	आज तक 1
	<b>Defence News</b>	<b>2-11</b>
	<b>Defence Strategic: National/International</b>	<b>2-11</b>
2.	Defence Secretary & Secretary General of MoD, Indonesia to Co-chair 7th Joint Defence Cooperation Committee Meeting in New Delhi	<i>Press Information Bureau</i> 2
3.	Army Officers Visit IIT-K, Discuss Def-related Issues	<i>The Times of India</i> 2
4.	Indian Army to Assess Implications of Chinese Construction in Shaksgam Valley	<i>Hindustan Times</i> 3
5.	India Lodges Protest with China over its Infra Development in Shaksgam Valley	<i>The Economic Times</i> 4
6.	Two Documents, Modi-Macron Visits—India-France Defence Partnership is Touching New Heights	<i>The Print</i> 4
7.	Pakistan-Turkey Team up against India – Ankara to Help Convert PAF’s Bombardier Global 6000 into a Jamming Aircraft	<i>The EurAsian Times</i> 7
8.	Russia Proposes UN Resolution on Banning Weapons in Space, Demands Action	<i>Business Standard</i> 9
9.	UK Wants Next-generation Defensive Aids for Royal Navy Submarines	<i>Naval Technology</i> 10
	<b>Science &amp; Technology News</b>	<b>11-12</b>
10.	Space Science Roadmap Formulation Meeting Held in Bengaluru	<i>The Hindu</i> 11



Thu, 02 May 2024

### भारत के SMART मिसाइल का दम... आसमान से, पानी से कहीं से भी हो सकेगा हमला... कन्फ्यूज हो जाएगी दुश्मन सेना

भारतीय रक्षा अनुसंधान और विकास संगठन (DRDO) ने 1 मई 2024 को कलाम आईलैंड से स्मार्ट मिसाइल का सफल परीक्षण किया. यह मिसाइल बेहद खूबसूरत और खतरनाक दिखती है. यह एक लंबी दूरी की सुपरसोनिक एंटी-सबमरीन मिसाइल है. इस मिसाइल की नाक पर 50 किलोग्राम वजनी विस्फोटक लगाया जाता है.

#### स्मार्ट नाम क्यों दिया गया?

मिसाइल का पूरा नाम है सुपरसोनिक मिसाइल असिस्टेड रिलीज ऑफ टॉरपीडो (Supersonic Missile Assisted Release of Torpedo - SMART). असल में यह एक टॉरपीडो है, जिसे मिसाइल की स्पीड और ताकत दी गई है. ताकि समंदर में दुश्मन के जहाज, युद्धपोत या पनडुब्बियों को पानी में दफनाया जा सके.

#### इसे कैसे दागते हैं?

SMART मिसाइल को फिलहाल BEML-Tatra TEL ट्रक से दागा जाता है. या फिर इसे किसी भी नौसैनिक युद्धपोत में तैनात किया जा सकता है. वहां से भी इसे वर्टिकल लॉन्च सिस्टम के जरिए दुश्मन की तरफ दाग सकते हैं. इसका वॉरहेड हाई एक्सप्लोसिव होता है. जो टकराते ही भयानक विस्फोट करता है.

#### किस तरह की मिसाइल है?

इसमें दो स्टेज की सॉलिड रॉकेट इंजन वाली मिसाइल है होती है. जिसमें इलेक्ट्रिक बैटरी से चलने वाली टॉरपीडो लगी होती है. यानी इसे सॉलिड फ्यूल और सिल्वर जिंक बैटरी से आगे बढ़ने की ताकत मिलती है.

#### कितनी रेंज और स्पीड है इसकी?

SMART मिसाइल की रेंज 643+20 km है. यानी मिसाइल 643 किलोमीटर तक सुपरसोनिक स्पीड से जाएगी. उसके बाद टॉरपीडो इसी स्पीड का फायदा उठाकर 20 किलोमीटर तक पानी में जा सकता है. इससे दुश्मन को यह आइडिया नहीं लगेगा कि मिसाइल से हमला हो रहा है या टॉरपीडो से. यह 1234 km/hr की गति से दुश्मन की ओर बढ़ती है.

#### बीच रास्ते में टारगेट और स्पीड बदल सकती है

यह स्मार्ट मिसाइल मिड कोर्स इनर्शियल नेविगेशन सिस्टम पर चलती है. यानी बीच रास्ते में ही दुश्मन टारगेट को बदला जा सकता है. स्पीड कम या ज्यादा की जा सकती है. इसके लिए बस डेटालिक भेजना होगा.

<https://www.aajtak.in/defence-news/story/what-is-a-smart-torpedo-missile-of-drdo-1935919-2024-05-02>



**Press Information Bureau**  
Government of India

**Ministry of Defence**

*Thu, 02 May 2024*

## **Defence Secretary & Secretary General of MoD, Indonesia to Co-chair 7th Joint Defence Cooperation Committee Meeting in New Delhi**

The seventh Joint Defence Cooperation Committee (JDCC) meeting between India and Indonesia will be held in New Delhi on May 03, 2024. The meeting will be co-chaired by Defence Secretary Shri Giridhar Aramane and Secretary General of Ministry of Defence, Indonesia Air Marshal (Retd.) Donny Ermawan Taufanto, MDS. Both sides will exchange views on regional and global issues of shared interest. The India-Indonesia friendship, which was elevated to the level of Comprehensive Strategic Partnership in 2018, has widened the scope of bilateral relations to allow for new collaboration in the realm of defence industry, science and technology etc. The defence relations form a significant pillar to this growing partnership.

Defence engagements between the two nations have diversified to include wide-ranging contacts between the services, military-to-military exchanges, high-level visits, capacity building and training programmes, cooperation in UN Peace Keeping, ship visits and bilateral exercises.

The defence cooperation agreement signed in 2001 between India and Indonesia stipulated the establishment of the JDCC to explore and identify potential areas of cooperation, matters of common interest, initiate, coordinate, monitor and control the approved cooperative activities.

The Secretary General, who is on a visit to India from May 02-04, 2024, will also undertake discussions with Indian Defence Industries in New Delhi and Pune.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2019412>

## **THE TIMES OF INDIA**

*Fri, 03 May 2024*

## **Army Officers Visit IIT-K, Discuss Def-related Issues**

In a significant development aimed at forging strategic partnerships, lieutenant general Upendra Dwivedi, PVSM, AVSM, vice chief of army staff (VCOAS), accompanied by ADG major general

CS Mann and other high-ranking army officers, visited the Indian Institute of Technology, Kanpur (IIT Kanpur). The distinguished guests were welcomed by professor Manindra Agrawal, director of IIT Kanpur and professor Kantesh Balani, faculty in-charge of the institute's army cell.

The visit facilitated in-depth discussions between the army officials and IIT Kanpur's faculty members specialising in defence-related areas, focusing on exploring potential collaborations to develop niche technology solutions for the Indian Army. The institute's professors showcased its research capabilities by providing an overview of the ongoing defence projects at the institute.

Sanjay Tandon, director of the DRDO Industry Academia Centre of Excellence at IIT Kanpur, elaborated on the CoE's mandate to establish an ecosystem for focused research and collaboration in advanced technology areas for defence and security. This highlighted the institute's commitment to encouraging industry-academia partnerships in strategic domains.

Faculty members showcased various innovative technologies to the army officers, including a substation Inspection robot, a generator for precision guidance kits, high-altitude logistics and eVTOL solutions, quadruped and rotary robots, and kamikaze drones. Three defense-technology startups incubated at IIT Kanpur also presented outstanding innovations, stressing the institute's role as a hub for entrepreneurship and technology transfer. The Indian Army team also visited the C3i Hub and FlexE Centre at the institute.

This visit reinforced IIT Kanpur's position as a premier institution actively contributing to the nation's defence and security efforts through advanced research and development.

<https://timesofindia.indiatimes.com/city/kanpur/army-officers-visit-iit-kanpur-discuss-defense-related-issues/articleshow/109798919.cms>



*Fri, 03 May 2024*

## **Indian Army to Assess Implications of Chinese Construction in Shaksgam Valley**

The Indian Army will be studying the military implications of China building a road in Shaksgam Valley as Beijing's physical occupation could potentially threaten Indian defences in Siachen Glacier. The 5180 square kilometer of Indian territory in Shaksgam Valley was illegally ceded by Pakistan to China in 1963.

While India last week lodged a strong protest against Chinese road construction in the Valley in Delhi as well as in Beijing, the road could be part of an alignment that links Karakoram Highway to Upper Shaksgam Valley, bordering the Siachen Glacier. The new road transverses through 16333 feet Aghil Pass and could provide an alternative alignment to Karakoram Pass via Upper Shaksgam and thereon to Khunjerab Pass in Northern Areas of Occupied Jammu and Kashmir.

The matter is of serious concern to India for if China extends the road to Upper Shaksgam Valley, then the Indian positions on Siachen Glacier will face twin threats---Pakistan in the South and China to the north. It is only logical to assume that the Indian Army will have to plan long term defences to deal with Chinese expansion in the Occupied Shaksgam Valley.

Although the current road construction is a patch between two possible alignments in the long term, it is quite evident that China wants to link Lower and Upper Shaksgam valley through road and military outposts in order to pressurize Indian Army positions on Siachen Glacier and Saltoro

Ridge. This is not to say that the area is largely glaciated with high mountains on all sides and dominated by K 2 peak and the Concordia complex.

India has been raising the issue of Shaksgam Valley in the Special Representative Dialogue on Boundary Resolution, the last meeting of which was held in December 2019. Even though Indian Special representative Ajit Doval has met his Chinese counterpart Wang Yi on the sidelines in BRICS in South Africa on July 24, 2023, the SR dialogue has virtually been put on the back burner after Chinese PLA threw all the bilateral agreements out of the window and transgressed in East Ladakh in May 2020. The loss of Colonel Santosh Babu and his 19 troopers in a clash with PLA at Galwan on June 15, 2020 has further hardened positions on both sides as India has no intentions in allowing Beijing to unilaterally impose the 1959 line on East Ladakh.

By lodging at least two protests in the past two years on road construction in Shaksgam Valley, India has made it clear to China that it is right to protect its territory and will take measures to ensure that road construction is halted in the illegally occupied territory.

<https://www.hindustantimes.com/india-news/indian-army-to-assess-implications-of-chinese-construction-in-shaksgam-valley-101714713691991.html>

## THE ECONOMIC TIMES

*Thu, 02 May 2024*

### **India Lodges Protest with China over its Infra Development in Shaksgam Valley**

India has lodged a strong protest with China for carrying out construction activities in the Shaksgam valley, in an "illegal" attempt to alter the situation on the ground. Ministry of External Affairs (MEA) spokesperson Randhir Jaiswal said on Thursday that the Shaksgam valley is a part of India and New Delhi never accepted the so-called China-Pakistan boundary pact of 1963 through which Islamabad "unlawfully" attempted to cede the area to Beijing.

"We have consistently conveyed our rejection of the same. We have registered our protest with the Chinese side against illegal attempts to alter facts on the ground," Jaiswal said at his weekly media briefing.

"We further reserve the right to take necessary measures to safeguard our interests," he said.

The Shaksgam valley is a strategically key region that is part of Pakistan-occupied Kashmir (PoK).

<https://economictimes.indiatimes.com/news/defence/india-lodges-protest-with-china-over-its-infra-development-in-shaksgam-valley/articleshow/109787828.cms>

## ThePrint

*Fri, 03 May 2024*

### **Two Documents, Modi-Macron Visits—India-France Defence Partnership is Touching New Heights**

*By Swasti Rao*

Chief of Defence Staff Gen Anil Chauhan recently concluded a week-long visit to France, where he interacted with top executives of several French defence majors like Dassault Aviation, Safran, and

Naval Group. He also interacted with various top military personnel in the French government. The primary agenda was discussing futuristic capabilities of the Indian armed forces.

The CDS's visit came shortly after the Chief of the French Army Staff, Pierre Schill, visited India in February. Last November, India's Army Chief had visited Paris as well.

The two sides remain committed to actualising the ambitious plans set during the subsequent exchanges of the two leaders in 2023, when the partnership celebrated 25 years, and in 2024, when President Emmanuel Macron graced India's Republic Day as the Chief Guest.

With such trust and strategic significance, it is logical that India and France should take their wide-spectrum cooperation to the next level, especially in the realm of defence cooperation, which remains the bedrock of the partnership. The recent flurry of high-profile visits suggests that much is in the offing before 2026, which can be formally declared as the year of Indo-French innovation.

There are two specific documents that guide the evolving strategic bonhomie between India and France — Horizon 2047, signed during Prime Minister Narendra Modi's visit to France on Bastille Day in July 2023, and the defence industrial roadmap signed during Macron's visit to India in January 2024.

These two documents cover the breadth of how various convergences are envisioned by the two sides.

Horizon 2047 is a strategic roadmap guiding the partnership until 2047, coinciding with India's independence centenary and the golden jubilee of India-France ties. It focuses on three pillars. One, enhancing India's defence, industrial, and technological independence with France's support. Two, strengthening bilateral, trilateral, and triangular cooperation in the Indo-Pacific. Three, advancing collaborative efforts in the space sector. The document also outlines a comprehensive matrix for bilateral cooperation across several areas, drawing from their mutual commitment to strategic autonomy and multipolarity.

When the defence industrial partnership roadmap was mentioned in the 20th point of the detailed joint statement released during Macron's visit in January, it took the Indian commentariat by storm, and for good reason.

The joint statement spanned across 41 points that spoke of the exceptional nature of the relationship. It talked of evolving ties and convergence of interest in the Indo-Pacific, joint exercises, trilateral overtures, and surveillance missions in the Indian Ocean Region through frameworks such as the Maritime Cooperation Dialogue.

Important in their own regard and crucial for ensuring dynamism in bilateral ties, it was still the defence industry roadmap that caught everyone's attention with its pithy articulation. Even though the detailed roadmap remains classified for now, the stress on co-designing, co-development, and co-production of defence equipment not only for India but also for other countries etched in stone the ambitious joint vision of how the two sides have committed to taking the bedrock of their bilateral ties ahead.

This roadmap is in accordance with India's ideal of Atmnirbhart Bharat and will cover both air and space technologies, maritime technology including underwater domain awareness.

### **France's rise as second-largest defence exporter**

According to SIPRI's five-yearly data of global arms flows between 2019-2023, France emerged as India's second-largest defence exporter, with 33 per cent of total Indian imports coming from France. Notably, Russia with 36 per cent still remains the topmost exporter. However, tracked over the five-year period, SIPRI data shows a steady decline in India's imports from Russia, from 76 per cent for 2009-2013 to 36 per cent for 2019-2023. India has reportedly not placed a fresh order with

Russia after the war in Ukraine. The deliveries received lately of equipment such as Iгла S manpads have been for orders placed around 2018. The remaining contingents of S 400s are still awaited, most likely to arrive by the third quarter of 2026.

With no significant orders placed since 2021, and the Ukraine war going unabated, the impact of sanctions on Russia's capacity to manufacture defence equipment and their subsidiaries for export remains unclear. Then there are technical difficulties in the rupee-ruble payment mechanism, which is likely to impede the purchase of bigger equipment. Except for licensed production of equipment such as the stellar BrahMos missiles that are being produced in India, and AK-203 (Kalashnikov) rifles at Amethi, the share of Russian exports is likely to fall even further.

### **Co-designing, co-development, co-production**

The sheer number and expanse of ventures between India and France has been increasing by the day. In 2023, India's DRDO opened an office in Paris for navigating cooperation in defence technology by harnessing the compatibilities and competencies of the two economies. DRDO has also entered into an agreement with France's Naval Group to enhance the capabilities of the Kalvari Class submarines. Alongside the initial procurement of six Kalvari attack submarines, the Ministry of Defence (MoD) has cleared the acquisition of three more submarines in 2023. The 2024 joint statement also lauds the developments on an MoU between DRDO and the French Directorate General of Armament.

The confidence shown by France for 100 per cent transfer of technology by Safran, the world's largest aircraft equipment manufacturer, for the proposed Safran-India Shakti jet engine deal, is unprecedented by a Western power. These jet engines are for the fifth-gen Advanced Medium Combat Aircraft (AMCA) designed for stealth. The Modi government has confirmed plans to develop seven squadrons of the AMCA, including two squadrons of the AMCA Mk1-A, to be equipped with GE-414 from the United States. The remaining five squadrons will be powered by new indigenous engines, with contenders including Safran of France, General Electric from the US, and Rolls Royce from the UK. It is here that France's involvement stands out by offering a 100 per cent transfer of technology.

Additionally, Safran has entered into a shareholder's agreement with India's HAL for industrial collaboration concerning the motorisation of the heavy-lift helicopters program (IMRH).

The other example can certainly be given from the aerospace giant Thales, which has announced plans to establish an avionics Maintenance, Repair and Operations (MRO) facility in Delhi. This indeed bears testimony to Thales support to modernisation and indigenisation efforts in India's aerospace and defence sector. It needs to be underscored that Thales is a pivotal member of the Rafale team of Dassault Aviation. Currently, the Indian Air Force (IAF) operates two squadrons of Rafale jets and is close to inking a deal for acquiring its marine version for India's aircraft carrier INS Vikrant.

Dassault also remains an important contender for India's Multi Role Fighter Aircraft (MRFA) whenever it materialises. Just like Safran's pitch for AMCA and IMRH operates on the logic of economies of scale, the same is applicable to Dassault for its deliveries of Rafales (air and marine version), Thales MRO facilities, and a potential deal for MRFAs. Although, the logic of economies of scale has to be reconciled with India's pitch for diversification as well.

### **Co-production for third parties**

Stated as one of the goals of the defence industry roadmap, one of the likely theatres for India-France joint production export is the Caucasus. India has been a steady supplier of weapons to the region after the war broke out in Nagorno-Karabakh in 2020, as has France, especially after 2023. Disgruntled by Collective Security Treaty Organization (CSTO), Armenia has virtually suspended



its membership and is siding with the West, despite keeping Russia's military base in the country. The geopolitical space for France has increased after Russia recently announced the withdrawal of its peacekeepers—which was seen as a major tool of Moscow's influence in the region.

Paris has been supplying Armenia with air defences, GM 200 radars, assault rifles and Mistral short-range air defence systems. France also trains Armenian troops.

India, for its part, has been siding with Armenia for a different geopolitical calculus, for instance, against Turkey and Pakistan, but lands up on the same side as France when it comes to weapons deliveries.

Armenia is expected to spend about \$1.5 billion on defence in 2024. A steady weapons supplier, in the backdrop of a geopolitical shift of power in the region, India could be inching closer to a strategic partnership with Armenia alongside France. This direction could logically culminate into joint production and export of weapons, in line with the MoD's stated objective of enhancing defence exports.

The convergence on the array of ambitious defence industrial plans must also translate into robust geopolitical roles, reflecting a more holistic approach to bolstering the fractured security of our epoch. That calls on the two sides to develop and deliver on reducing the prevalent uncertainties of an ambivalent world. Beyond semantics, such deliverables must be based on a realistic assessment of capabilities and convergences while respecting the divergent national interests of the other.

<https://theprint.in/opinion/two-documents-modi-macron-visits-india-france-defence-partnership-is-touching-new-heights/2067556/>



*Fri, 03 May 2024*

## **Pakistan-Turkey Team up against India – Ankara to Help Convert PAF's Bombardier Global 6000 into a Jamming Aircraft**

*By Ritu Sharma*

Keeping pace with the Indian Air Force's (IAF) modernization through the acquisition of French Rafales and indigenous Light Combat Aircraft (LCA) Tejas MK1A, the Pakistan Air Force (PAF) is gearing up to convert its lone Bombardier Global 6000 into a stand-off jamming (SOJ) aircraft with help from Turkish Aerospace Industries (TAI).

Inducted in the PAF in 2022 for VIP transport duties, it would serve as a special mission aircraft. PAF's need stems from the force's learning from 'Operation Swift Retort' conducted against India in 2019 in response to the Indian Air Force's cross-border Balakot strikes.

According to Quwa, PAF knows that "any future incursion into India" will be met with "a greater increase in air and surface-based threats," hinting at IAF's acquisition of Russian S-400 'Growler.'

The IAF has placed a massive order for LCA Mk1A, "a nimble and highly maneuverable lightweight fighter configured with an active electronically scanned array (AESA) and EW/ECM suite, set to replace the aging MiG-21 Bisons.

“Not only would it perform exponentially far better than the MiG-21, but it would also be a credible threat to any PAF fighter crossing the border, including the newly inducted J-10CE or prized F-16 Block-52,” the report said.

“In addition, the IAF will also have the Dassault Rafale, upgraded Sukhoi Su-30MKI, and an array of advanced medium-range and long-range surface-to-air missiles (SAM) at its disposal. Finally, the assets will be tied together into a counter-response completely unlike anything in 2019,” the report added.

The first hint was that PAF intended to convert the Global 6000 into a special mission aircraft in its latest calendar, where the VIP ferrying aircraft was labeled as an electronic warfare platform. The PAF’s unofficial publication – ‘Second-to-None’ – confirmed these plans.

The decision for the conversion came after the PAF realized the power of Electronic Warfare from Operation Swift Retort. During the mission, PAF deployed a large force comprising multirole fighters, attack fighters, and several special mission aircraft, namely the Falcon DA-20 EW aircraft and Saab 2000-based Erieye airborne early warning and control (AEW&C) aircraft.

### **Learning From Balakot Strikes**

The Balakot episode laid bare the tactical gaps for the PAF and the Pakistani military. The IAF could easily conduct the strikes deep into Pakistan’s territory, shocking the military establishment.

Also, the strikes happened during peacetime, negating the idea of nuclear deterrence. Till 2019, Pakistan had assumed that its nuclear weapons would prevent military strikes by India as it could lead to escalation. But India undertook the strikes, ignoring the nuclear umbrella.

The year 2019 made Pakistan realize that nuclear weapons alone would not deter India’s punitive strikes and started investing in conventional capabilities based on land, sea, and air. In other words, conventional deterrence has become imperative for Pakistan despite economic woes.

The PAF’s modernization plans for this decade are driven by three factors: Pakistan’s experience from Operation Balakot against India in 2019, the ongoing Russia-Ukraine War, and the increasing availability of advanced military technology from key partners like China and Turkey.

The goal is to build air wings dedicated to long-range airstrikes and air interdiction, dissuading potential adversaries from repeating operations like the Balakot strike.

Considering that TAI has been roped in to convert the Global 6000, it is assumed that the force will acquire the Aselsan HAVSOJ suite that Turkey uses to configure its four Global 6000s for the Turkish Air Force. The Aselsan HAVASOJ is equipped for three core EW missions: radar jamming, communications jamming, and electronic intelligence (ELINT).

For radar jamming, the HAVASOJ uses transceivers to jam enemy radars by recording their transmission frequencies and re-transmitting them using the same signal. The HAVASOJ is equipped with digital radar frequency memory (DRFM) systems to help achieve this capability.

In the ELINT role, the HAVASOJ would monitor an area for all enemy radar and communications transmissions. It will record that information in a ‘threat library,’ which would later feed electronic countermeasures (ECM) tasks, namely radar and communications jamming.

However, the PAF has yet to finalize the Aselsan HAVASOJ. There may be still an opportunity for other vendors to enter the fray. According to the report, it is also possible that the PAF is exploring a customized version of the HAVASOJ that is equipped for only one or two of the EW roles.

“In this scenario, the PAF would likely prioritize radar jamming ahead of the other functions (which can be delegated to other aircraft, like the Falcon DA-20s, drones, and land-based EW systems),” the report adds.

## **The Air Defense Gap**

Another capability gap Pakistan had in 2019 was a lack of surface-to-air missiles of sufficient range. In Operation Swift Retort, PAF relied heavily on its fighter fleet to deny access to enemy aircraft. The longest-range vector in PAF's fleet was the MBDA Spada 2000-Plus, which had a range of 20 km.

PAF's surface-to-air missiles have been deployed to protect strategic assets and not to deter enemy air activity. Since 2019, the PAF has not only invested in getting new fighter jets but has also built a new and robust ground-based air defense system (GBADS).

Ukraine's effective use of GBADS to restrict the enemy's air power impressed Pakistan's decision-maker to invest in adequate air defense.

However, it is worth noting that in addition to medium- and long-range SAMs, the PAF also set the groundwork for leveraging directed energy weapons and passive air defense measures. This was likely done to address the threat of loitering munitions and swarming drones.

The new PAF GBADS is a multi-layered system comprising long-range, medium-range, and short-range SAMs plus other active and passive anti-air systems, such as directed energy weapons (DEW) and electronic attack (EA) systems.

<https://www.eurasiantimes.com/pakistan-turkey-team-up-against-india-ankara/>

# **Business Standard**

*Thu, 02 May 2024*

## **Russia Proposes UN Resolution on Banning Weapons in Space, Demands Action**

Russia has circulated a UN resolution calling on all countries to take urgent action to prevent putting weapons in outer space for all time a week after it vetoed a US-Japan resolution to stop an arms race in space.

The Russian draft resolution, obtained Wednesday by The Associated Press, goes further than the US-Japan proposal, not only calling for efforts to stop weapons from being deployed in outer space but for preventing the threat or use of force in outer space, also for all time.

It says this should include deploying weapons from space against Earth, and from Earth against objects in outer space.

Russia's UN Ambassador Vassily Nebenzia told the Security Council when he vetoed the US-Japan draft that it didn't go far enough in banning all types of weapons in space.

The vetoed resolution focused solely on weapons of mass destruction including nuclear arms, and made no mention of other weapons in space.

It would have called on all countries not to develop or deploy nuclear arms or other weapons of mass destruction in space, as banned under a 1967 international treaty that the US and Russia ratified, and to agree to the need to verify compliance.

Before the US-Japan resolution was put to a vote on April 24, Russia and China proposed an amendment that would call on all countries, especially those with space capabilities, to prevent for all time the placement of weapons in outer space, and the threat of use of force in outer spaces.

The vote was 7 countries in favour, 7 against, and one abstention and the amendment was defeated because it failed to get the minimum 9 yes votes in the 15-member Security Council required for adoption.

US Ambassador Linda Thomas-Greenfield told the council after the vote that Russian President Vladimir Putin has said Moscow has no intention of deploying nuclear weapons in space.

Today's veto begs the question: Why? Why, if you are following the rules, would you not support a resolution that reaffirms them? What could you possibly be hiding, she asked. It's baffling. And it's a shame.

Putin was responding to White House confirmation in February that Russia has obtained a troubling anti-satellite weapon capability, although such a weapon is not operational yet.

Russia's UN Ambassador Vassily Nebenzia said after casting the veto that the US-Japan resolution cherry picked weapons of mass destruction.

He said much of the US and Japan's actions become clear if we recall that the US and their allies announced some time ago plans to place weapons in outer space.

Nebenzia also accused the US of blocking a Russian-Chinese proposal since 2008 for a treaty against putting weapons in outer space.

Thomas-Greenfield accused Russia of undermining global treaties to prevent the spread of nuclear weapons, irresponsibly invoking dangerous nuclear rhetoric, walking away from several of its arms control obligations, and refusing to engage in substantive discussions around arms control or risk reduction.

Much of the Russian draft resolution is exactly the same as the US-Japan draft, including the language on preventing an arms race in space.

It calls on all countries, especially those with major space capabilities, to contribute actively to the objective of the peaceful use of outer space and of the prevention of an arms race in outer space.

Thomas-Greenfield said the world is just beginning to understand the catastrophic ramifications of a nuclear explosion in space.

[https://www.business-standard.com/world-news/russia-proposes-un-resolution-on-banning-weapons-in-space-demands-action-124050200053\\_1.html](https://www.business-standard.com/world-news/russia-proposes-un-resolution-on-banning-weapons-in-space-demands-action-124050200053_1.html)

## Naval Technology

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### **UK Wants Next-generation Defensive Aids for Royal Navy Submarines**

The UK Ministry of Defence (MoD) is seeking potential supplier able to provide a next-generation submarine-based countermeasure capability to equip both current and future vessels in the fleet, and will shortlist up to three industry representatives that meet the pre-qualification standards.

In a 30 April 2024, contract opportunity notice, the UK MoD revealed that the £35m (\$42.6m) programme would run from October 2025 through to October 2032. Industry selected would be issued with an Invitation to Participate in Dialogue (ITPD). This system will be known as the Next Generation Countermeasure (NGCM) and fall under the wider Underwater Defensive Aids Suite

(UDAS) delivery programme, the MoD said. As part of the contract, suppliers would have to provide trials and testing, combat systems integration, equipment and technical support, an initial training needs analysis, and post design services as required.

Given the nature of the capability and the likely host platforms, such as the current Astute-class nuclear-powered attack submarines (SSN) or the future AUKUS-SSN, industry wishing to participate are required to have security classification up to including 'Secret UK Eyes Only' level. As such, available information on the kind of capabilities offered and eventually selected will be minimal.

### **UK MoD also seeking containerised ASW solutions**

Meanwhile, the UK MoD issued a Request for Information (RfI) on 30 April for the potential use of modular or containerised anti-submarine warfare (ASW) concepts, specifically regarding remote or autonomous ASW sensing capabilities, that could be hosted within a 20ft ISO container for deployment from a Common Medium sized Uncrewed Surface Vessel (MUSV) of around 40m length.

The MoD stated that the Royal Navy is seeking to "understand acoustic ASW solutions that are 'frigate-like' in capability parameters", but that MUSV vessel intended to host the system "may not be acoustically quietened or clad".

In addition, alternative non-acoustic sensing options were also of interest but would "need to represent a detection capability equal to current active/passive detection ranges" or would need to be hosted complimentary to an acoustic solution, the MoD said.

The description of a 40m MUSV host platform indicates that any solution would be tested onboard the XV Patrick Blackett, the Royal Navy's experimental warfare surface ship acquired in 2022. Built by Damen in the Netherlands, the XV Patrick Blackett was originally a commercial Fast Crew Supplier (FCS) 4008 craft modified for Royal Navy requirements.

The vessel has a length of 42 metres (m) and a gross tonnage of 270 tonnes (t), reaching a maximum speed of up to 20 knots. A crew of five personnel can be accommodated onboard.

The XV Patrick Blackett has a 140m<sup>2</sup> cargo deck space, with a load capacity of 2.5t per m<sup>2</sup> and is designed to accommodate containerised systems for UAVs or naval UAVs as required.

<https://www.naval-technology.com/news/uk-wants-next-generation-defensive-aids-for-royal-navy-submarines>

## **Science & Technology News**

**THE  HINDU**

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### **Space Science Roadmap Formulation Meeting Held in Bengaluru**

A Space Science Roadmap Formulation (SSRF) meeting was held in Bengaluru recently. It drew over 200 scientists from various research centres and universities nationwide.

According to ISRO, six distinct space science themes were deliberated during the meeting which include astronomy and astrophysics and exoplanets, cosmology and gravitation, astrobiology, astrochemistry and space biology, heliophysics and space weather, solar system exploration and near-Earth space exploration.

ISRO Chairman S. Somnath contextualised the meeting's objectives and outlined the anticipated outcomes, which aimed to formulate the nation's space science roadmap with inputs from eminent scientists.

Experts from research institutes across the country delivered plenary talks on open scientific issues and global trends within the six themes. Subsequently, splinter groups engaged in focused discussions with domain experts to identify significant scientific problems for exploration in the near (2030), mid (2031-2035), and long (2035-2045) terms.

ISRO said that the response to this initiative was highly positive and suggestions were made for splinter group members to identify scientific overlaps and enhance the capacity dedicated to the space science program to ensure its sustainability.

A.S. Kiran Kumar, Chairperson of the APEX Science Board (ASB) of ISRO, and URSC Director M. Sankaran emphasised the importance of involving youth in these programmes and prioritising national goals as a community, ultimately positioning India at the forefront of space science research and exploration.

<https://www.thehindu.com/news/national/karnataka/space-science-roadmap-formulation-meeting-held-in-bengaluru/article68131896.ece>

