

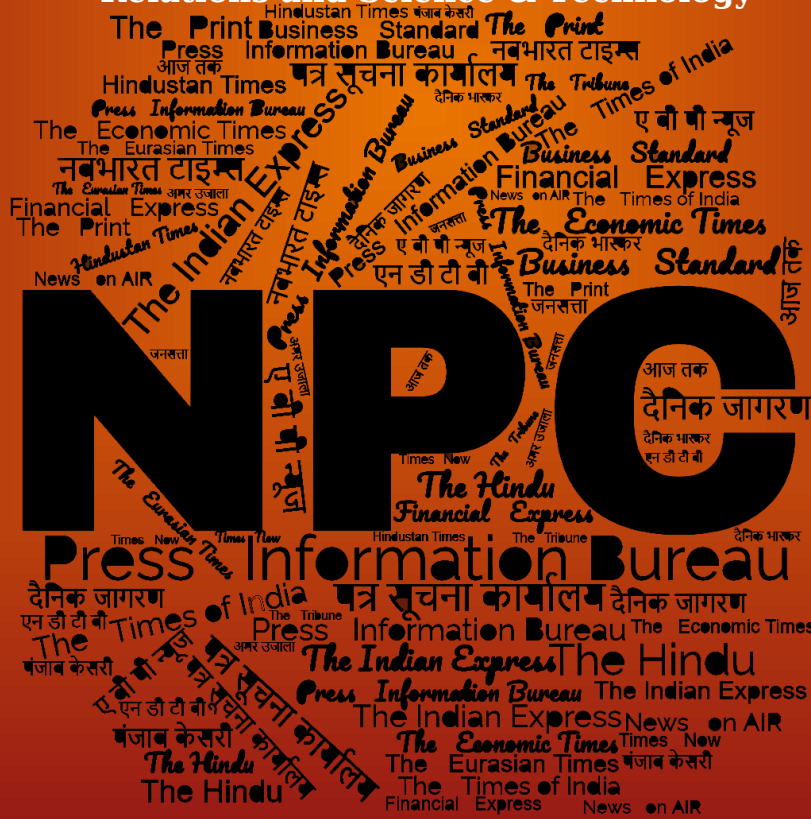
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# समाचार पत्रों से चयित अंश Newspapers Clippings

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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*Wed, 10 Jan 2024*

**Conclave on Autonomous Technology and Systems  
(CATS2024) Organized by Institute of Defence Scientists &  
Technologists and Research and Development Estt. (Engrs)  
DRDO**

Institute of Defence Scientists & Technologists and Research and Development Estt. (Engrs), DRDO is conducting seminars and exhibitions on the latest technology and systems to promote scientific research, technology, and systems development and innovation.

Various experts and manufacturing companies working in these fields are coming together on this occasion. This exhibition will be held at the DRDO's Dr. APJ Abdul Kalam Auditorium at Pashan and will be an invitees-only event. Modern defense products in the field of submarines, tanks, aircraft, and drones can be seen here. The exhibition will be inaugurated on January 11 (Thursday) at 9 am by Dr. Shailendra V Gade, Director General ACE (Armament and Combat Engineering Systems, DRDO). In the presence of Research and Development Estt. (Engrs) Director Dr. Makarand Joshi this meeting will be held. The main objective of the program is to showcase the upcoming technological trends in the defense sector and to encourage academic institutions, industries, and startups to develop indigenous defense technology, information by Dr. Desai Bapurao Sarvade will be given.

The utilization of autonomous systems by users in paramilitary, disaster management, etc. will be discussed extensively. Designers from national research institutes like DRDO, ISRO, BARC, CDAC, CSIR, NIO, NIOT, etc. will be present to showcase their needs and ambitions as well as discuss eminent academics doing research in this field. The exhibition is organized to depict India's capability to forge defense materials to become militarily self-reliant.

<https://www.punekarnews.in/conclave-on-autonomous-technology-and-systems-cats-2024-organized-by-institute-of-defence-scientists-technologists-and-research-and-development-estt-engrs-drdo/>



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

**Ministry of Defence**

*Wed, 10 Jan 2024*

## **Collaborative Efforts of BEL and Domestic Start-ups will Contribute to Aatmnirbharta in Defence Production**

**More Initiatives should emanate from the scientists & engineers of BEL: Defence Secretary  
Shri Giridhar Aramane**

Defence Secretary Shri Giridhar Aramane inaugurated 'Abhigyaan', the state-of-the-art auditorium at the Central Research Laboratory (CRL) of Bharat Electronics Limited (BEL), a Defence Public Service Unit (DPSU) on January 10, 2024 in Ghaziabad, UP. He termed the Abhigyan auditorium as an asset to the scientific community.

Interacting with the scientists and engineers of BEL, the Defence Secretary lauded their efforts towards bolstering National Security while carrying forward the Prime Minister Shri Narendra Modi's vision of Aatmanirbhar Bharat. He urged them to have more collaborations with the domestic start-ups and incubators with the aim to provide state-of-the-art technologies/products to the armed forces. He emphasized that more initiatives should come from the scientists and engineers of BEL.

The Defence Secretary added that as efforts are being made towards jointness of the three Services, BEL can play an important role in ensuring that the equipment/systems are provided to the Armed Forces and Indian Coast Guard in an integrated manner.

Abhigyaan auditorium consists of excellent acoustics, smart interfaces, a large interactive data wall and three cameras with extensive features for live feed. There are also two high resolution displays for simultaneous presentation and demonstration. The auditorium has a seating capacity for 250 people and will be used for product demos, symposiums, hackathons, tech talks and lectures.

Chairman and Managing Director, BEL, Shri Bhanu Prakash Srivastava and other senior officials were also present on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1994840>



**Press Information Bureau  
Government of India**

**Ministry of Defence**

*Wed, 10 Jan 2024*

## **Armed Forces Medical Services & AIIMS, New Delhi Collaborate to Conduct Combined Research Projects**

Armed Forces Medical Services (AFMS) under the Ministry of Defence and All India Institute of Medical Sciences (AIIMS), New Delhi signed on Jan 10, 2024 a Memorandum of Understanding (MOU) with objectives of collaboration in areas of mutual interest, combined research and academic activities addressing multidisciplinary scientific and technological issues.

DGAFMS Lt Gen Daljit Singh & Director, AIIMS Professor M Srinivas signed the MoU to explore possibilities of joint research projects, common educational activities, and a faculty exchange program. The faculties of these two organizations would explore facilities available with both institutions, especially in investigations, research, and patient care services.

The faculty exchange program will smoothen faculty movement from one institution to another for research and training purposes. A collaboration board of five members from both institutions has been formed, which will have monthly meetings to explore possible collaborations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1994911>



**Press Information Bureau  
Government of India**

**Ministry of Defence**

*Wed, 10 Jan 2024*

## **Raksha Mantri & his UK Counterpart Co-chair UK-India Defence Industry CEOs Roundtable in London**

**India is ready with skilled human resource base, a robust pro-FDI & pro-business ecosystem and a huge domestic market: Shri Rajnath Singh**

**“India envisions an enriching partnership with UK to co-operate, co-create & co-innovate”**

On the second and final day of his visit to the United Kingdom, Raksha Mantri Shri Rajnath Singh interacted with top UK Defence industry leaders and CEOs at an event in Trinity House, London on January 10, 2024. The UK-India Defence Industry CEOs Roundtable, co-chaired by Shri Rajnath Singh with his UK counterpart Mr Grant Shapps was attended by a large number of CEOs from UK defence industry; UK MoD officials; Chair, UK India Business Council; and CII India representatives. Some of the major companies represented were BAE Systems, GE Vernova, James Fisher Defence, Leonardo S.p.A., Martin Baker Aircraft Company Ltd, SAAB UK, Thales UK, Ultra-Maritime Rolls-Royce, ADS Group, and MBDA UK.

The meeting was also attended by UK Minister of State for Defence Procurement, Mr James Cartledge. The Roundtable included thematic discussions on strengthening the India-UK defence industrial relationship.

In the meeting, the Raksha Mantri welcomed the investment and technology collaboration from the UK, and stated that India is ready with skilled human resource base, a robust pro-FDI and pro-business ecosystem, and a huge domestic market.

Shri Rajnath Singh asserted that under the visionary leadership of Prime Minister Shri Narendra Modi, India is surging ahead on the path of becoming a developed economy by 2047. The ambition is backed by a clear headed roadmap to chart the course, and is backed by the collective will-power of 1.4 billion Indians to stay the course.

Highlighting the importance of the India-UK ties, the Raksha Mantri said there is a symbiotic relationship between the two countries and the Government of India envisions an enriching partnership with UK to cooperate, co-create and co-innovate. “By synergising the strengths of our nations, we can do great things together,” he said.

Mr Grant Shapps agreed with the statement of Shri Rajnath Singh regarding the symbiotic relationship between India and UK. Mr Grant Shapps further stated that the ties transcend the normal buyer-seller relationship and is fundamentally a strategic partnership.

The industry leaders from UK outlined their current and future plans for India. Aero-engines, Electric Propulsion, missiles, power-packs, and maritime systems were identified as some of the focus areas of joint work. The Raksha Mantri noted the positivity and enthusiasm of UK CEOs & business leaders on working in India and with the Indian companies.

On January 09, Shri Rajnath Singh held a bilateral meeting with Mr Grant Shapps. Emphasis was on enhancing defence industrial cooperation between the two countries. The bilateral meeting was followed by the signing of two agreements between India and UK - an MoU on conduct of bilateral international cadet exchange programme, and a Letter of Arrangement between Defence Research and Development Organisation (DRDO) and UK's Defence Science and Technology Laboratory (DSTL) on defence collaboration in research and development.

The Raksha Mantri also paid floral tributes to Father of the Nation Mahatma Gandhi at his statue at Tavistock Square. He also visited the Ambedkar House in London and paid tributes to Dr BR Ambedkar. The Ambedkar House was the home of Dr. BR Ambedkar, who lived there between 1921 and 1922 while he was pursuing a degree in Economics at London School of Economics, and a degree in Law at Gray's Inn. The Raksha Mantri, while paying tributes to Dr Ambedkar, noted in the Visitor's Book message that it is a great experience to visit the memorial of the creator of venerable Constitution of India, the guiding light of our Republic.

Shri Rajnath Singh also visited the Sri Swaminarayan temple at Neasden and paid his respects.

The Raksha Mantri is scheduled to meet UK PM Mr Rishi Sunak, and the UK Foreign Secretary (Secretary of State for Foreign, Commonwealth and Development Affairs) Mr David Cameron later today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1994935>



**Press Information Bureau  
Government of India**

**Ministry of Defence**

*Thu, 11 Jan 2024*

## **Raksha Mantri Calls on UK Prime Minister in London**

**UK & other like-minded countries should work with India for strengthening a peaceful & stable global rules-based order: Shri Rajnath Singh**

**Keen to bolster the defence & security pillar of UK-India ties: Mr Rishi Sunak**

Raksha Mantri Shri Rajnath Singh called on the Prime Minister of United Kingdom Mr Rishi Sunak at 10 Downing Street, London on January 10, 2024. The meeting was warm and cordial. The Raksha Mantri highlighted that both nations have made significant strides in moulding and recrafting the historic ties into a modern, multifaceted and mutually beneficial partnership, under the direction of the leaders of both the countries.

Shri Rajnath Singh recalled the recent enhancement in bilateral defence engagement, spanning joint exercises, training, capability building, increased interoperability, military-to-military ties especially in the maritime domain. He emphasised the ongoing efforts to enhance defence industrial cooperation, including in the technology domain. He briefed Mr Rishi Sunak about his positive interactions with the UK defence industry and the new positive energy in the bilateral defence relationship.

The Raksha Mantri stated that the UK and other like-minded countries should work with India for strengthening a peaceful and stable global rules-based order, including through partnering India in its inexorable rise, which can be strengthened, reinforced and speeded up with friendly collaboration.

Shri Rajnath Singh further stated that Prime Minister Shri Narendra Modi is leading the quest of 1.4 billion Indians towards the national objective of becoming a developed country by mid-21st century. Prime Minister Modi's efforts have borne remarkable fruits, growth is sustainably on the upswing, poverty has been reduced drastically, and a business friendly architecture has been put in place. At the international level, the Government of India is ready to partner with friends like the UK to strengthen the rule-based world order.

Prime Minister Sunak fully agreed with the Raksha Mantri on the need for UK and India to work in the domains of trade, defence and technology. In particular, he expressed hope that the ongoing Free Trade Agreement (FTA) negotiations could be brought to a successful conclusion soon. He also underlined his keenness, and that of his Government, to strengthen the defence and security pillar of the bilateral relationship, including through Government backing for stronger business and technology partnerships with Indian counterpart entities.

Shri Rajnath Singh gifted a Ram Darbar statue to the UK PM during the meeting, which was also attended by UK NSA Sir Tim Barrow.

The Raksha Mantri also met with the UK's Foreign Minister Lord David Cameron at the Foreign, Commonwealth and Development Office. The Ministers appreciated the new momentum and direction of the India-UK partnership, symbolised by intense engagements at various levels.

Shri Rajnath Singh outlined his goal of integrating defence industries of both countries including through supply chain integration to build resilience. He also emphasised the importance of bilateral

start-up level interaction, and identification and discussion of joint projects which India and UK could implement together.

Foreign Secretary Cameron reiterated the UK government's desire to collaborate with India in the defence areas, particularly in the field of defence industrial collaboration, as one of the means by which the UK hopes to strengthen the support for a rule-based international order.

Later, the Raksha Mantri interacted with the Indian community at India House, London. Over 160 prominent persons of Indian origin attended the interaction. A number of Indian military ex-servicemen, including few family members of World War II veterans were also present.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1995032>

## THE ECONOMIC TIMES

*Thu, 11 Jan 2024*

### **"Bharat now a Strategic Power... No Longer can anyone Show us Red Eye and get away with it": Rajnath Singh in London**

Citing a recent article published in the Chinese state-controlled Global Times, hailing India's growth story and its rising global stature and heft, Union Defence Minister Rajnath Singh on Wednesday said Beijing's perspective has altered drastically with the emergence of New Delhi as a 'strategic power'.

"A columnist for the Global Times, which, in a way, is a mouthpiece for China, published an article with the headline 'What I see about Bharat narrative in India'. This article is a ringing affirmation of the changing Chinese perspective on India. It seems the Chinese government has come to accept that our economic and foreign policies, as well as our changing strategic interests, have helped Bharat emerge as a key global economic player and a strategic power. We don't see anyone as our enemy but the world is aware that the relationship between India and China is currently under strain. However, we wish to cultivate good ties with all our neighbours and countries across the globe," Singh said in London on Wednesday.

Addressing community reception at the India House in London, the Raksha Mantri noted that the columnist, the Global Times piece, asserted that the Chinese government now accepts that India cannot be ignored at the global level.

"The writer also noted that the Chinese government now accepts that whether you like Bharat or not, our image and rising global standing can longer be ignored. Previously, when trade imbalances were discussed, India would count on Beijing to minimise trade imbalances between the two countries. However, that trend is no longer in vogue," the Defence Minister added.

Expanding on the country's rising global standing, the Defence Minister said, "I believe that the courage shown by our jawans during the standoff with Chinese troops at Galwan (Valley in Arunachal Pradesh) helped alter Beijing's perspective on Bharat. We are no more a weak country in the eyes of the world. We are a rising global power. Ab aisa nhi hai ki Bharat ko ankh dikha ke jo chahe so nikal jaye (No longer can anyone show us a red eye and get away with it).

Earlier this month, the Global Times applauded India's economic policies and diplomatic achievements over the past four years under the leadership of Prime Minister Narendra Modi, in a column titled 'Bharat Narrative'.



It stated that New Delhi's strategic thinking in "foreign policy has evolved, moving towards a great power strategy."

The opinion piece, written by Zhang Jiadong, the director of the Centre for South Asian Studies at Fudan University, Shanghai, also underlined India's 'remarkable achievements' across diverse fields and sectors over the past four years.

It also acknowledged India's robust economic growth, improvements in urban governance, and a shift in attitude towards international relations, notably with China.

"For example, when discussing the trade imbalance between China and India, Indian representatives earlier used to primarily focus on China's measures to reduce the trade imbalance. But now they are placing more emphasis on India's export potential," Jiadong wrote.

The article also commended India's proactive approach to fostering a 'Bharat narrative' and emphasised the nation's strategic confidence.

The author further stated that with its rapid economic and social development, India has become more strategically confident and proactive in creating and developing a 'Bharat narrative'.

"In the political and cultural spheres, India has moved from emphasising its democratic consensus with the West to highlighting the 'Indian feature' of democratic politics. Currently, there is even more emphasis on the Indian origins of democratic politics," he added.

The rare acknowledgement of India's advancements and PM Modi's strategic vision by the Global Times indicated the growing recognition of New Delhi's burgeoning global influence and the implications of its assertive posture on the international landscape.

Earlier, on Wednesday, Singh called on UK Prime Minister Rishi Sunak in London.

Singh arrived in the UK on Monday night. The ongoing visit is the first by a sitting Indian Defence minister to Great Britain in 23 years.

Singh is being accompanied by a high-level Ministry of Defence delegation, comprising senior officials from the Defence Research and Development Organisation (DRDO), Service Headquarters, the Department of Defence, and the Department of Defence Production.

<https://economictimes.indiatimes.com/news/india/bharat-now-a-strategic-power-no-longer-can-anyone-show-us-red-eye-and-get-away-with-it-rajnath-singh-in-london/articleshow/106712279.cms?from=mdr>

# ThePrint

Wed, 10 Jan 2024

## **Spearhead Carrier to be Deployed in Indian Ocean as India, UK vow to Strengthen Defence Cooperation During Rajnath Singh's Visit**

Aiming to bolster defence ties between New Delhi and London, the United Kingdom will send its naval groups— Littoral Response Group and Carrier Strike Group— to the Indian Ocean Region, in addition to holding multiple joint military exercises and expanding defence cooperation with India.

The UK Carrier Strike Group is a carrier battle group of the Royal Navy, while the Littoral Response Group is a Royal Navy task group.

The former will be deployed to the Indian Ocean Region later this year, and the latter will visit the region in 2025. Both will operate and train with Indian forces, UK Defence Secretary Grant Shapps said on Wednesday.

The UK and India on Wednesday vowed to continue strengthening ties during Defence Minister Rajnath Singh's visit to the country. This is the first visit of an Indian Defence Minister to the UK in more than 20 years.

On the second and final day of his visit to the UK, Rajnath Singh interacted with top UK Defence industry leaders and CEOs at an event in Trinity House, London, the Ministry of Defence said in a statement.

"Had a wonderful interaction with the industry leaders and CEOs at the UK-India Defence CEO Roundtable in London. India envisions an enriching partnership with the UK to cooperate, co-create and co-innovate. By synergizing the strengths of both the countries, we can do great things together," Singh posted on X.

The UK-India Defence Industry CEOs Roundtable, co-chaired by Singh with his UK counterpart Grant Shapps was attended by a large number of CEOs from the UK defence industry; UK MoD officials; Chair, UK India Business Council; and CII India representatives. Some of the major companies represented were BAE Systems, GE Vernova, James Fisher Defence, Leonardo S.p.A., Martin Baker Aircraft Company Ltd, SAAB UK, Thales UK, Ultra-Maritime Rolls-Royce, ADS Group, and MBDA UK.

The meeting was also attended by UK Minister of State for Defence Procurement, James Cartilidge. The Roundtable included thematic discussions on strengthening the India-UK defence industrial relationship.

In the meeting, the Defence Minister welcomed the investment and technology collaboration from the UK and stated that India is ready with a skilled human resource base, a robust pro-FDI and pro-business ecosystem, and a huge domestic market.

Rajnath Singh asserted that under the visionary leadership of Prime Minister Narendra Modi, India is surging ahead on the path of becoming a developed economy by 2047. The ambition is backed by a clear-headed roadmap to chart the course, and is backed by the collective will-power of 1.4 billion Indians to stay the course, the statement read.

Highlighting the importance of the India-UK ties, the Defence Minister said there is a symbiotic relationship between the two countries and the Government of India envisions an enriching partnership with the UK to cooperate, co-create and co-innovate.

"By synergising the strengths of our nations, we can do great things together," he said.

Grant Shapps agreed with Singh regarding the symbiotic relationship between India and UK. Shapps further stated that the ties transcend the normal buyer-seller relationship and are fundamentally a strategic partnership.

The industry leaders from UK outlined their current and future plans for India. Aero-engines, Electric Propulsion, missiles, power-packs, and maritime systems were identified as some of the focus areas of joint work. Defence Minister Singh noted the positivity and enthusiasm of UK CEOs and business leaders about working in India and with the Indian companies.

According to the statement by the UK government, Shapps welcomed Singh to the UK to agree on unprecedented levels of UK-India defence cooperation, according to an official release.

The two nations also discussed future cooperation in defence from joint exercises to knowledge sharing and instructor exchanges. These steps build on the comprehensive strategic partnership envisaged in the 2030 India-UK roadmap, announced in 2021.

In the coming years, the UK and India will also embark on more complex exercises between their respective militaries, building up to a landmark joint exercise to be conducted before the end of 2030, supporting shared goals of protecting critical trade routes and upholding the international rules-based system, as per the release.

Meanwhile, the UK and India have also confirmed several new joint initiatives. This includes signing a Letter of Arrangement that will enable further emphasis to be placed on research and development between the two nations, focused on next-generation capabilities.

This also includes solidifying an agreement on logistics exchange, allowing for the provision of logistic support, supplies and services between the United Kingdom and Indian Armed Forces, for joint training, joint exercises, authorised port visits and Humanitarian Assistance and Disaster Relief (HADR) operations, the statement read.

Later in the day, Rajanath Singh also met UK Foreign Secretary and former PM David Cameron and discussed enhancing India-UK ties and cooperation.

“Insightful deliberations with the UK Foreign Secretary, Mr David Cameron on boosting India-UK ties and deepening cooperation between both the countries,” Singh posted on X.

Earlier on Tuesday, Rajnath Singh held a bilateral meeting with his counterpart Grant Shapps. The emphasis was on enhancing defence-industrial cooperation between the two countries. The bilateral meeting was followed by the signing of two agreements between India and the UK – an MoU on the conduct of a bilateral international cadet exchange programme, and a Letter of Arrangement between the Defence Research and Development Organisation (DRDO) and the UK’s Defence Science and Technology Laboratory (DSTL) on defence collaboration in research and development, the Ministry stated.

Meanwhile, Defence Minister Singh also paid floral tributes to Mahatma Gandhi at his statue at Tavistock Square. He also visited the Ambedkar House in London and paid tributes to Dr BR Ambedkar. The Ambedkar House was the home of Dr. BR Ambedkar, who lived there between 1921 and 1922 while he was pursuing a degree in Economics at London School of Economics, and a degree in Law at Gray’s Inn.

Rajnath Singh, while paying tributes to Dr Ambedkar, noted in the Visitor’s Book message that it is a great experience to visit the memorial of the creator of venerable Constitution of India, the guiding light of our Republic.

Rajnath Singh also visited the Sri Swaminarayan temple at Neasden and paid his respects, the Ministry added.

<https://theprint.in/world/spearhead-carrier-to-be-deployed-in-indian-ocean-as-india-uk-vow-to-strengthen-defence-cooperation-during-rajnath-singhs-visit/1918626/>



Wed, 10 Jan 2024

## चीन-पाक को मिलेगा करारा जवाब, नौसेना को मिला अत्याधुनिक ड्रोन, जानें क्या है इसकी खासियत

भारतीय नौसेना प्रमुख एडमिरल आर हरि कुमार ने हैदराबाद में अडानी डिफेंस द्वारा निर्मित दृष्टि 10 स्टारलाइनर ड्रोन (Drishti 10 Starliner Drone) का अनावरण किया। इस मानव रहित ड्रोन (UAV) को नेवी में शामिल किया

जाएगा। दृष्टि 10 स्टारलाइनर ड्रोन अत्याधुनिक UAV तकनीक युद्ध-सिद्ध और स्वदेशी एडवांस ऐरियल तकनीक से लैस है।

अडानी डिफेंस फर्म ने बताया कि ड्रोन 36 घंटे की एंड्योरेंस, 450 किलोग्राम पेलोड क्षमता वाला एक उन्नत इंटेलिजेंस और सर्विलांस (ISR) प्लेटफॉर्म है। यह एकमात्र सैन्य प्लेटफॉर्म है जो सभी मौसमों में दोनों हवाई क्षेत्रों में उड़ान भर सकता है। कंपनी ने कहा कि नौसेना के समुद्री अभियानों में शामिल होने के लिए यूएवी हैदराबाद से पोरबंदर तक उड़ान भरेगा। भारत में ही पूरी तरह से तैयार स्वदेशी UAV दृष्टि -10 स्टारलाइनर को नौसेना को सौंपा गया है और यह देश में बना पहला UAV दृष्टि-10 स्टारलाइनर है।

### नौसेना को मिलेगा एडवांस दृष्टि 10 स्टारलाइनर ड्रोन

इस मौके पर एडमिरल आर हरि कुमार ने कहा, “यह एक महत्वपूर्ण अवसर है और आईएसआर प्रौद्योगिकी और समुद्री वर्चस्व में आत्मनिर्भरता की भारत की खोज में एक परिवर्तनकारी कदम है। अडानी समूह ने मैन्युफैक्चर तक ही सीमित नहीं बल्कि स्थानीय क्षमताओं को विकसित करने के लिए पिछले कई सालों से व्यवस्थित रूप से काम करके मानव रहित प्रणालियों के प्रति अपनी प्रतिबद्धता दर्शाई है।” एडमिरल ने कहा कि हमारे नौसैनिक अभियानों में दृष्टि 10 के एकीकरण से हमारी नौसैनिक क्षमताओं में वृद्धि होगी, लगातार विकसित होने वाली समुद्री निगरानी और सर्विलांस के लिए हमारी तैयारी मजबूत होगी।”

### अडानी डिफेंस पहले भी बना चुका है कई बड़े हथियार

अडानी डिफेंस और एयरोस्पेस ने भारतीय सशस्त्र बलों और अन्य अर्धसैनिक बलों का समर्थन करने के लिए छोटे हथियार, मानव रहित हवाई वाहन, रडार, रक्षा इलेक्ट्रॉनिक्स और एवियोनिक्स, सामरिक संचार प्रणाली और इलेक्ट्रो-ऑप्टिकल सिस्टम जैसे कई बड़े उपकरण तैयार किए हैं। ड्रोन के उभरते खतरे के साथ, अडानी डिफेंस रक्षा और नागरिक दोनों अनुप्रयोगों के लिए काउंटर ड्रोन सिस्टम विकसित कर रहा है।

<https://www.jansatta.com/national/indian-navy-chief-admiral-r-hari-kumar-unveils-drishti-10-starliner-drones-manufactured-by-adani-defence/3154678/>

## Business Standard

Wed, 10 Jan 2024

### Indian Navy 'Proactively' Keeping Pirates at Bay: Admiral Hari Kumar

The Indian Navy is proactively deploying its fleet to keep the pirates away and confine them in their waters, Chief of Naval Staff Admiral Hari Kumar said on Wednesday.

After unveiling the indigenously manufactured Drishti 10 Starliner Unmanned Aerial Vehicle (UAV) by Adani Defence and Aerospace for the Navy, Hari Kumar said there have been about 35 drone attacks on ships largely on Israel-owned or flagged or related vessels in the Red Sea, North and Central Arabian Sea during the last 40-42 days.

Without taking names, he said the immediate neighbours of India collectively hold a very large inventory of UAVs and therefore, it's only prudent that the country and its armed forces continue to harness resident expertise in the domain.

"Recently we have had only two incidents (attempts of pirates to hijack ships). Both were not Indian flagged vessels, but in the second case we had Indian crew so we had to respond. So we boarded and rescued the crew...So we are now very proactively deploying our units there to ensure that these pirates keep away," he told reporters.

The Indian Navy on Friday thwarted the attempted hijacking of Liberian-flagged vessel MV Lila Norfolk in the North Arabian Sea and rescued all its crew members including 15 Indians.

The Chief of Naval Staff further said the anti-piracy operations have been going on since 2008 and the Navy has deployed over 105 ships over the period.

Hari Kumar, replying to a query on drone attacks on ships, said they are doing forensic analysis of the debris of the three ships which were attacked.

Earlier addressing the gathering, he said it is only prudent that the country and the armed forces continue to harness "our resident expertise" in the domain of UAVs as "both our immediate neighbours" collectively hold a large inventory of UAVs.

The importance of autonomous systems in the rapidly evolving and dynamic, tech-infused wars of the contemporary world needs no emphasis, he added.

Their disproportionate impact is being witnessed in the ongoing conflicts in Europe and West Asia, he said.

Further, the "recent incidents" (an apparent reference to the hijack attempts) in the North and the Central regions of the Arabian Sea amply demonstrates the challenges posed by such systems when they fall in the hands of non-state actors and terrorists, he said.

Today, autonomous systems are becoming a preferred choice in the order of battle for nations across the globe, he said.

While the Indian Navy has been operating UAVs over the last two decades, the delivery of 'Drishti' symbolises the Navy's vision to be a 'atmanirbhar' force, he added.

With state-of-the-art sensors, enhanced endurance, advanced communication capabilities as well as new age technologies, Drishti could be a potent force multiplier, adding capability in undertaking intelligence, surveillance and reconnaissance operations across the Indian Ocean region, he said.

He expressed confidence that 'Drishti' would play a pivotal role in shaping future naval operations towards safeguarding India's national maritime interests in the Indian ocean region.

Speaking on the occasion, Union Minister of State for Defence Ajay Bhatt said the Drishti 10 (Starliner) would help in keeping a close watch on the seas.

Praising the role of 'Marcos' in saving crew members when pirates attempted to take control of a ship in Arabian Sea recently, he said it shows that the country is becoming self-reliant and that self-confidence is building up.

[https://www.business-standard.com/india-news/indian-navy-proactively-keeping-pirates-at-bay-admiral-hari-kumar-124011000560\\_1.html](https://www.business-standard.com/india-news/indian-navy-proactively-keeping-pirates-at-bay-admiral-hari-kumar-124011000560_1.html)



*Wed, 10 Jan 2024*

## **Autonomous Systems Becoming Preferred Choice in Order of Battle for Nations across the Globe: Navy Chief**

Stating that autonomous systems were becoming a preferred choice in the Order of Battle for nations across the globe, Navy Chief Admiral R. Hari Kumar said on Wednesday that recent (maritime) incidents in Northern Arabian Sea "amply demonstrate the challenges posed by such systems when they fall in the hands of non-state actors and terrorists."

He was speaking at the unveiling event of the first Drishti-10 starliner Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) manufactured by Adani Defence and Aerospace for the Navy in Hyderabad. It is an indigenously built version of Hermes-900 UAV of Elbit Systems of Israel and according to the Adani has over 70% indigenous content.

The Army and Navy have contracted two Hermes-900s each under emergency procurement last year.

To questions on the attacks on commercial shipping in the Red Sea, Adm. Kumar said that there were 35 drone attacks in the last 40 to 42 days, on ships and the target was Israel owned ships or those linked to Israel, and mainly in Red Sea, North Arabian Sea, and Central Arabian Sea. He further said that the Indian Navy had collected samples of debris from three vessels (which were attacked) and was examining them forensically to identify the origin of the attack.

Noting that the importance of autonomous systems in the rapidly evolving and dynamic tech-infused wars of the contemporary world needed no emphasis, Adm. Kumar said: “Both our immediate neighbours collectively hold a very large inventory of UAVs. Therefore, it is only prudent that we, as a nation, and as armed forces, continue to harness our resident expertise in this domain, by remaining agile, adaptable and ahead of the curve.”

With state-of-the art sensors, enhanced endurance, advanced communication capabilities as well as new-age technologies such as Automatic Take Off and Landing (ATOL), Drishti would be a potent force multiplier, adding capability and credibility in undertaking Intelligence, Surveillance and Reconnaissance (ISR) across the Indian Ocean Region, the Navy Chief said. Additionally, the versatility and flexibility offered through modularity and mobility of ground support equipment would enable them to operate Drishti from naval air stations across the country, Adm. Kumar said adding that Navy personnel were undergoing training which would be over later this month and the UAV was likely to be inducted in February.

The Hermes-900 is an advanced ISR platform with 36 hours endurance, 450 kgs payload capacity, the only all-weather military platform with STANAG 4671 certification, and clear to fly in both segregated and unsegregated airspace, according to Elbit.

The first UAV with 75 Navy personnel would leave from Hyderabad to Porbandar to be inducted into naval maritime operations, observed Ashish Rajvanshi, CEO of Adani Defence and Aerospace. “Our on-time delivery to Indian Navy is a testament to our robust quality management processes and excellent support from our partners who have worked diligently over the last 10 months from contract to delivery, and ensured more than 70% indigenisation,” he added.

Speaking at the event, Director General Army Aviation Lt. Gen. A. K. Suri said that the Army was looking to receive the Drishti-10s in the next 2-3 months.

Hyderabad had the most evolved and most mature defence and aerospace ecosystem in the country, said Jayesh Ranjan, Principal Secretary of the Industries, Commerce and Information Technology, Telangana. About 30% of components for ISRO’s Mars orbiter were manufactured by companies in Hyderabad, he stated.

As reported by The Hindu earlier, under the fourth tranche of emergency procurements sanctioned by the government, the three services contracted two MALE UAVs, all from Israel. While the Army and Navy have procured the Hermes 900 manufactured by Elbit Systems, the Indian Air Force has procured the Heron Mk2 from Israel Aerospace Industries (IAI). In 2021, the Army had contracted four Heron-Mk2 UAS which were inducted in 2022.

Adani Aerospace and Defence in partnership with Elbit Systems - Adani Elbit UAV Complex manufactures the complete carbon composite aerostructures for Hermes 900 and Hermes 450 in Hyderabad.

As reported by this newspaper earlier, Chief of Defence Staff Gen. Anil Chauhan has ordered two studies to be conducted regarding major military platforms used by all three services, on UAV and armoured helicopters. Of these, the study on UAVs has since been completed with the recommendation for 31 MQ-9B High Altitude Long Endurance UAVs and 155 MALE UAVs.

The deal for 31 MQ-9B UAVs is in advanced stages of procurement.

### **Heron upgrade**

There is also a major upgrade plan lined up for all the Heron to Mk2 for weaponisation and facilitation of SATCOM capability estimated to cost of ₹21,000 crore. However, that has been long delayed and officials expressed confidence that it would be cleared soon.

As reported earlier, in August 2021 the Army Aviation got control of the Army's Heron MALE UAVs which were earlier with the Army's Artillery. The Army is also looking to create a separate cadre of UAV operators and the proposal is currently under consideration by the Army Headquarters.

Elbit Systems describes the Hermes 900 Starliner, as a "powerful and trend setting" MALE UAV that features adverse weather capabilities and qualified to be "safely integrated into civilian airspace and fly in the same environment with manned aircraft."

<https://www.thehindu.com/news/national/navy-chief-formally-receives-drishiti-10-long-endurance-uav-from-adani-defence-in-hyderabad/article67726088.ece>

## **ThePrint**

*Wed, 10 Jan 2024*

### **Long-range Missiles, Electronic Warfare to Latest Radar Tech — what Upgraded Su-30 MKI will Look Like**

From having the ability to strike at enemy targets beyond 100 km to modern electronic warfighting capabilities with the latest radar technology, about 100 Russian-origin Su-30 MKIs will undergo a full-fledged upgrade after a contract is signed this year.

The integration and upgrade process will be undertaken in India through close collaboration between the state-run Hindustan Aeronautics Limited (HAL) and Russians.

Sources in the defence establishment said that while 100 fighters will be upgraded in the initial lot, the rest of the 160 more in the inventory will be upgraded in batches.

The HAL will take on the upgrades as the 'Lead System Integrator' with support from the Defence Research and Development Organisation (DRDO) along with other defence public sector undertakings (DPSU) as well as the private industry, the sources said.

The Indian Air Force (IAF) will be the key driver by dedicating teams for Project Monitoring, Software Development and Flight Testing and Evaluation.

The sources explained that having been the mainstay of the IAF fighter fleet for over two decades, mid-life upgrade of the Su-30MKI is long overdue.

With an exponential rate of technological advances in the field of military aviation, it becomes imperative for any fighter aircraft to undergo a mid-life upgrade at some point during its life cycle, they added.

The limitation of the aircraft was acutely felt after the Balakot strike of 2019. As reported by ThePrint, the Su 30-MKI was outmatched in terms of ability to track and hit by the F-16s of the Pakistan Air Force (PAF) and it was forced to take a tactical manoeuvre to avoid the enemy fighters.

The requirements for the 'Su-30 Enhancement Programme' were frozen in 2017 after multiple discussions with Original Equipment Manufacturer (OEM), the Sukhoi Corporation, the HAL and other stakeholders.

The sources added that keeping in mind the need to reduce dependency of foreign OEMs, the upgrade programme was reconceived with the view to utilise indigenous technologies.

The upgrade will be centred around an indigenous Active Electronically Scanned Array (AESA) radar, which will be more capable than the one to be installed on the Tejas Mk1-A.

The fighter jet will also be equipped with enhanced avionics systems, sensors and new generation long range air-to-air and air-to-ground weapons. A comprehensive Electronic Warfare (EW) suite is also planned to enhance the survivability of the aircraft in hostile airspace, the sources said.

The Su-30 MKIs, which were procured in batches from the late 90s through off the shelf purchase and knocked down kits, were in the past retro-fitted with limited sub-systems from France, Israel as well as India.

### **Difference upgrades will make**

Currently, the Su-30 MKI forms the backbone of the IAF's fighter inventory, with about 260 of these in service. In November 2023, the air force issued a tender to HAL for buying 12 additional Su-30 MKI fighters.

The sources explained that since Su-30 MKIs are the most in number, these fighters will be at the forefront in case of a flare up with adversaries like China. The upgrades thus intend to take the fourth-generation fighter to become a 4.5-generation plus fighter.

The AESA radar, which will replace the Passive Electronically Scanned Array (PESA) radar, offers a longer range along with other features such as 'low probability of intercept' and can detect air-to-air and air-to-ground incoming threats simultaneously.

As of now, the Su-30 MKI's EW capabilities date back to the early 2000s. The sources said the fighters will be fitted with 'cutting-edge' technology that best caters to present-day threats. Future generations of the Astra missiles may be fitted onto the platform, they added.

While Su-30 MKI currently has the R-77 missile, the plan is to integrate the indigenous Beyond Visual Range Air-to-Air Missile (BVRAAM) 'Astra'.

With the Sukhoi-30 MKI going in for upgrades, a workshare of approximately Rs 1,200 crore can be expected for MSMEs or start-ups and private industries during the design and development phase, it is learnt.

### **How upgrades will help**

"The Sukhoi-30 MKI that the IAF flies today has much improved capabilities than the original Sukhoi-30K inducted way back in 1997, which I was a part of," Air Marshal Diptendu Choudhary (retd.), a former Sukhoi pilot, told ThePrint.

Nearing three decades and being IAF's mainstay combat fleet, the upgrade will keep the fighter jet combat relevant in the future, he added. Radar upgrade will enable it to 'see further' or detect the enemy at much longer ranges and engage more targets simultaneously.



Choudhary said the avionics upgrade will enable it to 'hit further' with advanced long range stand-off air to air missiles which can shoot down the aerial threats at very long ranges, well inside the enemy's airspace.

Similarly, advanced long range standoff air to ground precision weapons will be able to hit enemy targets deep inside its territory with pinpoint accuracy, while reducing the vulnerability of the platform to the enemy air defence, he added.

“Advanced EW and self-protection suite will enable the IAF to 'reach further' by penetrating deeper into hostile airspaces, by increasing the survivability of the aircraft against enemy air and ground threats,” he said.

<https://theprint.in/defence/long-range-missiles-electronic-warfare-to-latest-radar-tech-what-upgraded-su-30-mki-will-look-like/1916462/>



*Wed, 10 Jan 2024*

## **India and Czech Republic Forge Strategic Partnership: Pioneering Innovation, Defence, and Economic Collaboration**

Prime Minister Narendra Modi and Czech Prime Minister Petr Fiala have agreed to strengthen mutual ties and tap into untapped potential for innovation cooperation. During their meeting on the sidelines of the Vibrant Gujarat Summit in Gandhinagar, the leaders decided to elevate India-Czechia relations in innovative sectors to a Strategic Partnership on Innovation.

The decision comes as a testament to their commitment to fostering joint partnerships and projects. Both leaders expressed their determination to intensify bilateral high-level, professional, and business exchanges. Their collaboration is set to extend across various areas, including new and emerging technologies, automobiles, climate change, and defence.

Official spokesperson of Ministry of External Affairs Randhir Jaiswal shared insights on the meeting, highlighting the depth of discussions on X (formerly Twitter), “Deepening India-Czech partnership! PM @narendramodi held a fruitful meeting with PM @P\_Fiala of the Czech Republic in Gandhinagar. The two leaders reviewed bilateral relations and held discussions covering various sectors, including new and emerging technologies, automobiles, climate change, and defence.”

Addressing the Vibrant Gujarat Summit, Czech PM Fiala emphasized the vast potential for Czech-Indian collaboration, not only in energy but also in critical sectors like wastewater treatment and sustainable agriculture. His focus on long-term strategic investment underscored the importance of AI research, electromobility, and semiconductors in driving high-tech industries.

The economic ties between India and the Czech Republic have been on an upward trajectory since the latter's entry into the European Union in 2004. With new mechanisms and diversified interactions, bilateral trade witnessed a substantial surge, reaching over USD 3.16 billion in 2022, a remarkable increase from USD 86 million in 1993 according to Czech statistics.

The bilateral defence cooperation has also seen significant progress since the signing of the MoU on bilateral defence cooperation in October 2003. A Joint Defence Committee has been established, with six meetings held so far, the latest occurring in New Delhi on February 3, 2020. Czech defence companies have been consistent suppliers of military equipment to the Indian armed forces, solidifying the defence ties between the two nations.

Both India and the Czech Republic are actively engaged in niche technologies, leveraging the latter's strength as an incubator of technologies in strategic sectors. These include defence, nuclear energy, cybersecurity, AI, Big Data, nanotechnology, and laser technology. A notable collaborative achievement in space technology was marked in June 2017 when ISRO successfully launched the Czech nanosatellite, VZLUSAT-1.

The Czech Republic has been a steadfast supporter of India's international aspirations. It supported India's full membership in the Nuclear Suppliers Group (NSG) and backed its candidacy for non-permanent membership in the UN Security Council (UNSC) for 2021-22. Aligning with India's stance, the Czech Republic advocates for comprehensive UN reforms and supports India's quest for a permanent UNSC seat.

Czech Prime Minister Petr Fiala's visit to India for the Vibrant Gujarat Global Summit, spanning three days from January 10-12, was marked by a warm reception at the airport by Gujarat Chief Minister Bhupendra Patel. The visit not only strengthened diplomatic ties but also laid the groundwork for future collaborations.

### **Joint Statement**

A Joint Statement issued by the two countries after their discussions emphasized their commitment to fortify the work of the Joint Commission on Economic Cooperation. Established under the Agreement on Economic Cooperation signed on June 8, 2010, in Prague, the commission is chaired by the Minister of Commerce and Industry of the Republic of India and the Minister of Industry and Trade of the Czech Republic.

Both countries expressed their dedication to fostering innovation cooperation under "Industry 4.0" through the Joint Commission. The commitment extends across various sectors, encompassing engineering, the automotive industry, space activities, air navigation services, clean technologies, information and communication technologies, digital trade, mining, sustainable agriculture, food processing, water treatment, pharmaceuticals, wellness, the Indian system of medicine, waste, and secondary material management.

The defence and cyber security aspect of the partnership was also underlined in the Joint Statement. Both nations stressed the importance of innovation in these fields and expressed satisfaction with the existing connections. They committed to further encouraging cooperation in research and development, training, and innovative production solutions involving Czech and Indian stakeholders.

Furthermore, the two leaders expressed their desire to enhance the dialogue on critical issues such as cyber security, cyber governance, cybercrime, space security, CBRN Defence, and countering hybrid threats. This will be achieved through cooperation between relevant agencies and stakeholders, sharing best practices, skills, and capacity building. Both partners intend to cooperate in multilateral forums, including the United Nations, on cyber matters of mutual interest.

In line with this commitment, both sides are keen to intensify proposed cooperation within the framework of the Joint Committee on Defence Cooperation. This committee, established by the Agreement on Defence Cooperation signed on October 21, 2003, in Prague, is a testament to the comprehensive nature of defence ties between the two governments.

<https://www.financialexpress.com/business/defence-india-and-czech-republic-forge-strategic-partnership-pioneering-innovation-defence-and-economic-collaboration-3361224/>

## India-Maldives Row Frames the Need for India's Long Neglected Marine Doctrine

*By Arun Prakash*

The incipient tensions between India and its tiny neighbour, Maldives, simmering for over a decade, finally came to a head when three junior ministers of the island nation's government made crude and disparaging remarks on social media about Prime Minister Narendra Modi's visit to the Lakshadweep islands. Once New Delhi conveyed its displeasure over this gross impropriety, the Maldivian government distanced itself from the remarks, and President Mohamed Muizzu "suspended" the errant ministers before departing for his maiden visit to Beijing.

While it may be tempting to dismiss this contretemps as a "storm in a teacup," there are a few dimensions to this episode, with implications that go beyond the transgressions of juvenile politicians. They could serve as lessons for the future.

First, the strategic dimension. The Maldives archipelago — consisting of 27 coral atolls dispersed north-to-south over 900 km of the southern Indian Ocean, with an exclusive economic zone of nearly a million square km — is an important element in India's maritime security matrix. While the Indian Navy (IN) has taken cognisance of this in formulating its doctrine and deployments, our decision-makers have continued to suffer from a "continental fixation", and in the absence of a national security strategy, our maritime initiatives have remained random and sporadic.

As far back as 1945, India's "oracle of maritime wisdom," K M Panikkar had pronounced that "an exclusively land-based defence policy for India will, in future, be nothing short of blindness... India's freedom will hardly be worth a day's purchase if Indian interests in the Indian Ocean are not defended." He had accurately predicted: "That China intends to embark on a policy of large-scale naval expansion is clear enough... with her bases extending as far south as Hainan, China will be in an advantageous position..." It also bears recalling that the British had maintained a Royal Air Force base on Maldives' Gan Island since 1942, which they vacated with reluctance only in 1976 and then moved 200 miles south to their Indian Ocean territory of Diego Garcia.

Second, our diplomatic approach to Maldives (and perhaps other neighbours) needs scrutiny. Politics in Muslim-majority Maldives has been influenced, as much by hyper-nationalism and religious fervour, as by the India-China rivalry. Alarms should have rung in the MEA as early as 2011 when the relationship actually started fraying. A blunt signal was the peremptory cancellation of a contract to develop Male's international airport awarded to Indian conglomerate GMR, driven ostensibly by Opposition charges of "compromise of national sovereignty". But some questions remain unanswered: Did New Delhi receive a warning of emerging hostility from its Male representatives? If so, was anything done to stem the slide in relations? While China's politico-economic seduction, coupled with Pakistan's religious incitement — using the "Islamic card" — has no doubt played an important role in alienating Maldives, there is room for introspection on India's part too. Given its population of just half a million, Maldives is Asia's smallest country and hyper-sensitivity to "big-brotherly" attitudes is to be expected. Anecdotal evidence suggests that Indian diplomats often arouse resentment, especially in neighbourhood capitals, by their condescending attitudes, over-emphasis on India's cultural dominance and projecting a "viceroy's" rather than envoy's image. When coupled with India's ongoing domestic churn, wherein communal "hate speeches" are often seen going unchecked, the overall picture for neighbours could not be an attractive one.

Third, as India and China vie for influence in the Indo-Pacific, we need to shift exclusive focus from border disputes to the larger geopolitical competition. In the Indian Ocean Region China suffers from the “tyranny of distance.” For example, Male is about 6,000 km from the nearest Chinese port of Hainan and only 700 km from Kochi. To reach Male a ship, at 15 knots, would take just a day and a half from Kochi and more than 10 days from Hainan.

The distinct advantages of having a friendly neighbour next-door should have become obvious to Maldivians during the 1988 abortive “coup d’etat”, the 2004 tsunami, and the 2014 drinking-water crisis, when the Indian Navy was the “first responder” in each case. One is confident that India’s good-neighbourly attitude will endure, regardless of transient diplomatic hiccups.

However, China being the world’s largest trading nation, has its own compulsions. Its economy and industry, being overwhelmingly dependent on the uninterrupted passage of seaborne trade, have rendered the country’s Indian Ocean sea lanes akin to a “jugular vein,” to be protected at all costs. It is to this end that Beijing has developed potential maritime footholds in the Indian Ocean Region, like Hambantota in Sri Lanka and Gwadar in Pakistan, and leased a military/naval base in Djibouti. Herein lies the imperative of checkmating India to enlist Maldives as an IOR ally.

As a final corollary to the Maldives episode, one would urge better exploitation of the potential of maritime diplomacy – not as a substitute, but as a vital instrument of conventional diplomacy. The “diplomatic role” is the second of four roles assigned by the Maritime Doctrine to the Indian Navy, its larger purpose being, “to favourably shape the maritime environment in furtherance of national interests, in consonance with the foreign policy and national security objectives.”

For decades, the Indian Navy would receive urgent requests from maritime neighbours, for training, naval presence, advisers and hardware. Very often, we had to disappoint them, due to bureaucratic impediments, and lack of funding. Finally, in 2005-06, the Naval HQ, on its own, created an organisation headed by a two-star admiral devoted to foreign cooperation. Patrol boats, aircraft and helicopters, withdrawn from the navy’s own inventory, were transferred to Sri Lanka, Maldives, Myanmar and Maldives. This maritime diplomacy has had long-lasting and salutary consequences.

Prime Minister Narendra Modi had, in 2015, coined the slogan, “security and growth for all in the region,” whose acronym SAGAR has become a foreign-policy catchphrase, representing broad regional maritime cooperation. However, there is no document amplifying the vision underpinning SAGAR. Perhaps, it is time to flesh out SAGAR as a new and comprehensive maritime doctrine that will lend direction and purpose to regional diplomacy — both maritime and conventional.

<https://indianexpress.com/article/opinion/columns/india-maldives-row-frames-the-need-for-indias-long-neglected-marine-doctrine-9104043/>



Wed, 10 Jan 2024

## **Why the Proposed Military Base at Minicoy Islands will be a Game-changer**

*By Shishir Gupta*

The Indian Air Force (IAF) proposal to set up a forward fighter airbase in Minicoy Islands, 425 kilometres off Thiruvananthapuram, is part of a national security strategy to safeguard the sea lanes

of communications (SLOCs) as well as keep the Arabian Sea free from non-state actors in the region.

This strategy was put on the drawing board when General Bipin Rawat was the Chief of Defence Staff (CDS) and was a piece of a larger chess board involving upgrading of all air and naval bases in Andamans and Nicobar Islands in the Bay of Bengal. As of now, Minicoy Islands has a small Indian Navy detachment but its strategic potential is tremendous due to its location.

The 200-kilometre wide nine-degree channel between Suheli Par Island and the Minicoy hosts trillion-dollar merchant shipping between Europe, Middle-East, South East Asia and North Asia and it's the key SLOC for carriers headed to and from Malacca Straits including Sri Lanka and South Indian Ocean. Even traffic headed from Suez Canal and Persian Gulf to Sunda, Lombok or Ombi-Wetar straits of Indonesia has to pass in the vicinity of Minicoy Islands and the Andamans and Nicobar Islands territory of India.

This nine-degree channel complements the ten-degree channel, which separates the Great Andamans from the Nicobar Islands, and leads to the Malacca Straits. As per Gen Rawat's vision, the upgradation of air base at Campbell Bay and the building of a replenishment facility for global tankers waiting for their turn to enter Malacca Straits was part of a national security plan and is steadily being implemented with the help of friendly QUAD powers.

Not only the expanded air base at Minicoy and Campbell Bay give India better maritime domain awareness of the Arabian Sea and Indian Ocean but also help protect the 7500 km long Indian coastline from outside threat. It will also give the Indian armed forces more transparency of the Indian Ocean Region theatre with Chinese warships making frequent forays in the region ostensibly to participate in the anti-piracy force off the Gulf of Aden. But there is more to it.

In military terms, forward bases at Minicoy and Campbell Bay will project force in Indian Ocean Region as IAF fighters will be able to cover the entire Arabian Sea up to East Africa using mid-air refuelers, just as Indian military aircraft could fly up to coast of QUAD ally Australia after taking off from Campbell Bay in Nicobar Islands. The Indian capability will further be expanded with the availability of high altitude long endurance armed MQ-9B Predator Drones from the US. The tri-service bases at Minicoy and Campbell Bay may appear to be a small speck in the vast Indian Ocean canvass, but they will be a game-changer in Indian strategy to take on the Chinese expansionist challenge in the Indo-Pacific.

<https://www.hindustantimes.com/india-news/why-the-proposed-military-base-at-minicoy-islands-will-be-a-gamechanger-101704859052112.html>



*Wed, 10 Jan 2024*

## **Surface Navy 2024: US Navy Looks to Accelerate Cold Spray Applications**

The US Navy (USN) is seeking to expand its use of cold spray technology to repair and maintain its platforms and improve fleet readiness, Dan Stanley of the Naval Sea Systems Command (NAVSEA) engineering directorate technology branch told Janes. "We've made some good headway with cold spray in the navy," Stanley told Janes during interview in advance of the Surface Navy Association (SNA) National Symposium 2024, which started on 9 January.

“We're keeping up that momentum,” he said. “We've been very aggressive to leverage real world opportunities to show where cold spray is advantageous. We've not been as risk adverse. We've been assessing the technical risk in opportunities to show in the real world what cold spray can do.”

After showing how cold spray technology can save time and money on repairs and maintenance with popup cells, shipboard repairs, and expeditionary operations, the USN is looking not only to expand those types of uses, but the service is also continuing to develop different kinds of cold spray powders to broaden the kind of repairs the technology can be used for especially to address wear and corrosion issues.

“Cold spray gives us a chance to reuse parts we were scrapping,” Stanley noted. “It helps with the material readiness of the fleet. The navy is leaning hard into cold spray.”

<https://www.janes.com/defence-news/news-detail/surface-navy-2024-us-navy-looks-to-accelerate-cold-spray-applications>

## Science & Technology News

# THE TIMES OF INDIA

*Thu, 11 Jan 2024*

## **IISER Researchers Find Bacterial Defence System against Virus**

Researchers from the Indian Institute of Science Education and Research (IISER) Berhampur and one collaborator from an American institution have claimed to have discovered a novel bacterial defence system against viral attacks.

They have clarified the mystery pertaining to one of the well-known bacterial defence systems targeting the viral threats such as bacteriophages.

The research work led by Arunkumar Krishnan, assistant professor from IISER Berhampur, has been published in a peer-reviewed journal, Nucleic Acids Research, from the Oxford University Press as a breakthrough article. The co-authors were Rakesh Siuli from IISER Berhampur and L Aravind from NCBI, NIH, USA.

Krishnan said like all organisms bacteria also possess sophisticated immune mechanisms to defend themselves against viral threats. “Bacteria has an array of multiple defence systems that are encoded in the bacterial genomes such as CRISPAR-Cas, toxin-antitoxin and restriction modification system among others,” he added.

“We have unravelled the enigmas surrounding one of the bacterial defence systems employed against bacteriophages. The investigation illuminates poorly understood facets of the Dnd defense system. This discovery showcases bacteria’s sophisticated strategies during crucial cellular processes to defend against viral threats,” said the researcher.

Dnd defence system encodes eight genes, of which five are part of the modification component adding Sulphur into the backbone of the bacterial DNA and other three genes are part of the restriction component targeting the virus. Krishnan said their study clarified many intricate features and presented evidence for their actual mode of action against viruses targeting bacteria, dispelling

earlier views on these systems. The research highlights the potential of comparative and evolutionary genomics in addressing fundamental aspects of biology, a field largely overlooked in India, he added.

He said the findings open new avenues for research, guiding future experimental exploration of this unique bacterial defence system in detail.

<https://timesofindia.indiatimes.com/city/bhubaneswar/iiser-researchers-discover-novel-bacterial-defence-system-against-viral-attacks/articleshow/106714035.cms>



*Wed, 10 Jan 2024*

## **IISc Bengaluru Comes up with Warm Vaccine against Current Strains of SARS-CoV-2**

A heat-tolerant vaccine developed by the Indian Institute of Science (IISc) researchers is said to be effective against all current strains of SARS-CoV-2 besides having the potential to be quickly adapted for future variants as well.

According to IISc-Bengaluru, since the beginning of the COVID-19 pandemic, Prof. Raghavan Varadarajan from the institute's Molecular Biophysics Unit (MBU) and collaborators have been working on developing a heat-tolerant vaccine that can offer protection against different strains of SARS-CoV-2 – both current and future variants. In a study published in *npj Vaccines*, they report the design of a synthetic antigen that can be manufactured as a potential COVID-19 vaccine candidate.

They showed that their vaccine is effective against all current strains of SARS-CoV-2, and can be quickly adapted for future variants as well.

According to IISc., while current vaccines are proven to be effective against most SARS-CoV-2 strains, their efficacy has declined due to rapid mutation by the virus. After analysing various proteins found in the virus, the researchers selected two parts of SARS-CoV-2's spike protein – the S2 subunit and the Receptor Binding Domain (RBD) – for designing their vaccine candidate. The S2 subunit is highly conserved. It mutates much less than the S1 subunit, which is the target of most current vaccines. Scientists have also known that the RBD can provoke a strong immune response in the host. Therefore, the team created a hybrid protein called RS2 by combining these two components.

The researchers used mammalian cell lines to study the expression of the hybrid protein.

“The protein showed very high levels of expression, and I (initially) thought that the experiment was not working properly,” said Nidhi Mittal, PhD student at MBU and first author of the study.

The team then tested the effects of the protein in both mice and hamster models. They found that the hybrid protein triggered a strong immune response and provided better protection when compared to vaccines containing the whole spike protein.

According to IISc., the RS2 antigen can also be stored at room temperature for a month without the need for cold storage, unlike many vaccines in the market which require mandatory cold storage. This would make the distribution and storage of these vaccine candidates much more economical.

Varadarajan said that his team began working on the vaccine even before the pandemic became widespread in India. “At that time, the Bill and Melinda Gates Foundation provided funding and support,” he said,

Since 2000, Varadarajan’s team has been working on designing several viral vaccines, including those against AIDS and influenza. They have leveraged this expertise to design their current RS2-based COVID-19 vaccine candidate in collaboration with the startup Mynvax, which was, until recently, incubated at IISc. According to the team, the vaccine candidate can be tailored to incorporate the RBD region of any new variant of SARS-CoV-2 that might emerge. Its high levels of expression and stability at room temperature can greatly reduce production and distribution costs, making it well suited for combating COVID-19.

<https://www.thehindu.com/sci-tech/health/iisc-bengaluru-comes-up-with-warm-vaccine-against-current-strains-of-sars-cov-2-covid/article67726209.ece>



Wed, 10 Jan 2024

## **NASA Delays Artemis Mission; Astronauts will not Return to Moon till 2026**

The excitement was palpable. After more than fifty years, humanity was set to return back to the Moon with Artemis missions. But now, it seems like we will have to wait longer. NASA announced Wednesday that it will delay its next few Artemis missions due to technical hurdles.

“To safely carry out these missions, agency leaders are adjusting the schedules for Artemis II and Artemis III to allow teams to work through challenges associated with first-time developments, operations, and integration,” said a press statement from the American space agency.

The Artemis 2 mission, which will fly astronauts around the Moon and back without landing, has been postponed from November 2024 to September 2025. Artemis 3, which is planned to land the first humans near the lunar south pole, has been postponed from late 2025 to September 2026. The ambitious Artemis 4 mission to the Gateway lunar space station still remains on track for 2028, according to the agency. “We are returning to the Moon in a way we never have before, and the safety of our astronauts is NASA’s top priority as we prepare for future Artemis missions We’ve learned a lot since Artemis I, and the success of these early missions relies on our commercial and international partnerships to further our reach and understanding of humanity’s place in our solar system. Artemis represents what we can accomplish as a nation – and as a global coalition. When we set our sights on what is hard, together, we can achieve what is great,” said NASA Administrator Bill Nelson in a press statement.

Artemis 2 will be the first flight test with crew on the Orion spacecraft and it will test environmental control and life support systems that are crucial when it comes to keeping astronauts alive. NASA teams are troubleshooting a battery issue and addressing other issues with a component that is responsible for ventilation and temperature control. There was also an unexpected loss of char layer pieces from Orion’s heat shield during the Artemis 1 issue and the investigation into that is expected to conclude in spring this year. The new timeline also ensures that scientists and engineers have enough time to learn from Artemis 2 to improve Artemis 3.

<https://indianexpress.com/article/technology/science/nasa-artemis-moon-mission-delayed-2026-9103098/>



## The AI Potential

By Narain Batra

Digital India under the tech-savvy Prime Minister Narendra Modi faces a new challenge as to how to create public-private partnerships to harness the immense power of Generative Artificial Intelligence to bring about transformative changes in all aspects of Indian life.

The Indian government has identified AI as an important strategic technology and has launched the National AI Strategy as well as other initiatives to promote AI adoption. Areas where AI is finding applications in India include healthcare, agriculture, education, smart cities, financial services, defence, transportation, and energy. Big tech companies, startups, government organisations, and industry are notable players adopting AI.

The shortage of AI talent is a big challenge. The Government of India has launched programmes like YUVAI (Responsible AI for Youth) to train more students and workers in AI skills. Indian tech universities and companies are also expanding their AI programmes and certifications. It would take some time before India catches up with leading AI nations like the US and China in research output and availability of large datasets. But the government and private sector are working to boost dataset availability across sectors. Adoption and growth of AI applications are still relatively low compared to global counterparts, but are increasing quickly across leading industries.

Crucial problems are a lack of infrastructure, paucity of talent, a business culture open to change, and customer trust, problems which are not unique to India. Nonetheless, AI in India is a booming landscape with immense potential. The field is experiencing a surge of growth and enthusiasm, with several factors contributing to its current status. Bengaluru is home to the highest number of GenAI startups in India at present.

An EY report estimates that GenAI could boost India's GDP by \$359-438 billion by 2030, representing a 5.9-7.2 per cent increase with a potential to add \$1.2-1.5 trillion cumulatively over seven years. Sectors like business services, finance, healthcare, and education are poised for significant impact. According to NASSCOM, "As of May 2023, the Indian Generative AI landscape had more than 60 start-ups dedicated to offering solutions and services to their customers spread across various industry verticals.

More than \$590 million in funding has already flown into this space, with 2022 being the year with the heaviest funding inflow." Indian enterprises are optimistic about GenAI's potential but acknowledge the need for better preparation, navigating a digital transformation journey to survive in the era of what Tom Goodman called 'Digital Darwinism', the impact of disruptive digital technologies on businesses.

Every new technology, as it begins to be used in various industries, brings about some changes due to interplay of forces, but the impact of GenAI would be more radical. In the course of time, it would redefine and reshape every industry, workplace, and workforce. By 2027, according to ServiceNow's estimate, AI would impact more than 16 million full-time employees in India who would need reskilling and up-skilling due to automation especially in manufacturing, agriculture, forestry, and fishing industries.

As AI redefines old jobs, it would also create new openings, as many as 4.7 million technology-related jobs in manufacturing, retail, education, and finance and insurance, according to the report. FICCI's report "The Economic Impact of Generative AI: The Future of Work in India"

projects that GenAI could unlock \$621 billion in productive capacity for India, equivalent to nearly one-fifth of the country's GDP in 2021. This indicates a significant potential for AI to drive economic growth and advancement in India.

The steady increase in AI investment since 2011, the remarkable growth of AI startups, and the intentions of 88 per cent of surveyed companies to invest in AI-related technologies further underscore this potential. The establishment of the National Programme for AI in 2018 and the announcement in the 2023 Finance Budget to set up three Centres of Excellence in AI demonstrate the government's commitment to responsible AI adoption and inclusive AI-enabled economic growth.

These initiatives, "Make AI for India" and "Make AI Work for India", aim to foster collaboration between educational institutions and leading industries to research and develop practical AI applications in key sectors like agriculture, health, and sustainable cities. India's wealth of data, creativity, and language diversity, writes Jibu Elias in OECD.AI, make it prime territory for harnessing GenAI to fuel economic growth and innovation across different sectors.

Examples like KissanGPT for agriculture, PolicyGPT for insurance, GitaGPT for cultural engagement, and BharatGPT for language support showcase how GenAI can handle specific challenges, optimize processes, and empower Indian communities at large. Widespread adoption of these AI tools tailored to India's needs holds immense potential for innovation, advancement, and inclusive development from ground level up.

The National Artificial Intelligence Mission aims to make India a leader in AI development and adoption. Focusing on creating public digital infrastructure to support AI growth and investment in indigenous training datasets for Indian languages is crucial. The regulatory framework needs to be proactive to ensure citizen safety.

Data privacy and ethical considerations remain critical. Talent pool and skill development are essential for sustained growth. Accessibility and affordability of GenAI solutions for wider adoption is necessary. Overall, GenAI in India is a rapidly evolving field with immense potential to revolutionize various industries, create new jobs, and drive economic growth.

Addressing the challenges and capitalizing on the opportunities will be crucial for India to fully harness the power of this transformative technology. It's important to keep in mind that despite being home to one of the world's largest start-up ecosystems, India has yet to make a material impact in the rapidly advancing AI arena. No home grown Indian contenders have emerged to challenge the dominance of large language model titans such as OpenAI's GPT-4, Google's Bard, and others.

<https://www.thestatesman.com/opinion/the-ai-potential-1503258416.html>

