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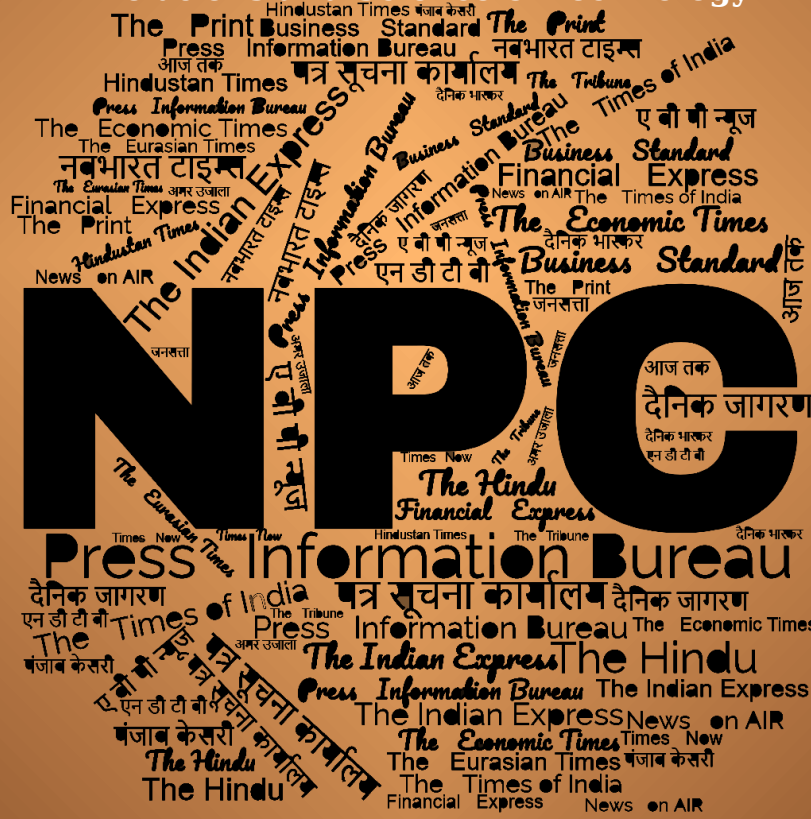
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# समाचार पत्रों से चयित अंश Newspapers Clippings

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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## दुश्मन के हमलों से सेफ रहेंगे सेना के गोला-बारूद, DRDO की इस स्टोरेज फैसिलिटी में होगी सुरक्षा

DRDO Vertical Shaft Based Underground Ammunition Storage Structure: डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गनाइजेशन (DRDO) की दिल्ली में स्थित लेबोरेट्री सेंटर ऑफ फायर एक्सप्लोसिव एंड एनवायरमेंट सेफ्टी (CFEES) ने वर्टिकल शाफ्ट बेस्ड अंडरग्राउंड एम्युनेशन स्टोरेज फैसिलिटी (Underground Ammunition Storage Facility) को डिजाइन और डेवलप किया है। यह ब्लास्ट के प्रभाव के ऊपर की ओर वर्टिकल नुकसान को कम करने की क्षमता रखता है, जिससे आसपास मौजूद चीजों पर ब्लास्ट का प्रभाव कम पड़ता है।

इस अंडरग्राउंड एम्युनेशन स्टोरेज फैसिलिटी का डिजाइन वैलिडेशन टेस्ट 30 अप्रैल को किया गया था। अंडरग्राउंड सुविधा के एक रूम में 5 हजार किलो TNT एक्सप्लोजन करके सशस्त्र बलों की मौजूदगी में मैकेग्राइज्ड ब्लास्ट टेस्ट किया गया था। CFEES टीम ने सटीक और अत्यधिक सुरक्षा के साथ टेस्ट किया। टेस्ट के दौरान रिकॉर्ड किए गए सभी पैरामीटर एप्रॉक्सीमेट वैल्यू पर खरे उतरे हैं।

विस्फोटकों को रखने के दौरान बनाए गए सुरक्षा मानकों पर यह स्टोरेज फैसिलिटी पूरी तरह से खरा उतरेगा। इस स्टोरेज फैसिलिटी की सुविधा यह सुनिश्चित करेगी कि इसके अंदर रखे गए विस्फोटकों में हुआ ब्लास्ट आसपास ज्यादा नुकसान नहीं पहुंचाएगा। इसके साथ ही बाकी की सुविधा का ऑपरेशन आसानी से चलता रहेगा।

### क्यों तैयार किया गया है स्टोरेज फैसिलिटी?

दरअसल, पर्याप्त भूमि की उपलब्धता ना होने के कारण सशस्त्र बलों को गोला-बारूद का स्टोरेज करने में कठिनाई होती है, क्योंकि गोला-बारूद स्टोरेज स्ट्रक्चर के लिए बड़े सेफ्टी डिस्टेंस की जरूरत होती है। जब गोला-बारूद को अंडरग्राउंड रखा जाता है, तो सेफ्टी डिस्टेंस काफी कम हो जाती है। मैकेग्राइज्ड टेस्ट के रिजल्ट के आधार पर, प्रति कक्ष 120 मीट्रिक टन (40 मीट्रिक टन नेट एक्सप्लोसिव कंटेंट) एम्युनेशन स्टोरेज तक सेफ्टी डिस्टेंस बनाया गया है। CFEES की ओर से डेवलप किए गए इस डिजाइन में मौजूदा डिजाइनों की तुलना में सेफ्टी डिस्टेंस और कॉस्ट को 50 फीसद तक कम करने का अतिरिक्त लाभ मिलता है। डिजाइन किसी भी तरह के हवाई हमले या तोड़फोड़ से स्टोर किए गए एम्युनेशन की हाई सिक्योरिटी की सेफ्टी को सुनिश्चित करता है।

डिफेंस रिसर्च एंड डेवलपमेंट डिपार्टमेंट के सचिव और DRDO के अध्यक्ष ने सफल मैकेग्राइज्ड ब्लास्ट टेस्ट में शामिल टीमों को बधाई दी। उन्होंने कहा कि इस सुविधा का उपयोग सशस्त्र बल बड़े पैमाने पर कर सकते हैं, ताकि सभी प्रकार के गोला-बारूद के स्टोरेज के लिए लैंड फुटप्रिंट की जरूरत को कम किया जा सके। इसके साथ ही हवाई हमलों या तोड़फोड़ के खिलाफ गोला-बारूद की सुरक्षा को सुनिश्चित किया जा सके।

<https://bharat.republicworld.com/india-news/general-news/drdo-cfees-designed-and-developed-vertical-shaft-based-underground-ammunition-storage-structure>

## DRDO on Twitter



## Defence News

## Defence Strategic: National/International



Wed, 03 May 2023

### Army Holds 'Buland Bharat' Exercise in Arunachal to Test Synergy in Simulated War Conditions

The armed forces have carried out an integrated surveillance and firepower training exercise known as Buland Bharat to test “simulated war conditions in high altitude area” at the Mandala High Altitude Firing Ranges in Arunachal Pradesh even as tensions continue to prevail along the Line of

Actual Control with China. “The month-long training culminated in the test exercise in which troops and equipment were tested in simulated war conditions in high altitude areas and extreme weather conditions during which synergised surveillance and firepower from infantry and artillery radars, weapon systems and direction of fire from air were practised,” said a source. Uninterrupted communication on multiple media was also tested at long distances.

The exercise validated plans for bringing down integrated firepower by orchestrating synchronised firing by artillery guns and fire support components of the infantry, aimed toward the destruction of designated targets. As per the official message tweeted by Indian Army’s Gajraj Corps Artillery, Infantry, Sashtra Seema Bal (SSB), Indo Tibetan Border Police (ITBP) and the Special Forces conducted day and night training for integrated surveillance and application of fire to maximize destruction at target. The SSB and ITBP are the Border Guarding Forces under the administrative control of the Ministry of Home Affairs. Former Artillery officer (Gunner) Lt Gen VK Chaturvedi (Retd) said, “It is a major exercise to add coordination and speed towards the detection, destruction and depletion of the enemy’s war waging capabilities.”

“Exercise Buland Bharat involved the synergised application of surveillance and firepower capabilities of the artillery and the infantry in close coordination with Special Forces, Aviation and Central Armed Police Forces deployed in West Kameng and Tawang districts of Arunachal Pradesh,” added the source. The Gajraj Corps, under which the exercise was held, handles major responsibilities which span from counterinsurgency to the Line of Actual Control in West Arunachal Pradesh including the Tawang area.

Last week, Defence Minister Rajnath Singh categorically conveyed that development of relations between India and China is premised on prevalence of peace and tranquility at the borders.

The Defence Minister “reiterated that violation of existing agreements has eroded the entire basis of bilateral relations and disengagement at the border will logically be followed with de-escalation,” said the MoD, adding that the two ministers had “frank discussions about developments on the India-China border as well as bilateral relations.”

The bilateral meeting was the first between the two Defence Ministers since the May 2020 standoff in Eastern Ladakh. India has been talking of the status quo ante as far as the situation in Eastern Ladakh is concerned where in May 2020 the Chinese People’s Liberation Army (PLA) had mobilized its troops creating a standoff at multiple points. The Indian Army responded to it with mirror deployment.

Further, Foreign Minister S Jaishankar is to hold a bilateral meeting with Chinese Foreign Minister Qin Gang on Thursday, prior to his attending the Shanghai Cooperation Organisation Foreign Ministers meeting.

<https://www.newindianexpress.com/nation/2023/may/03/army-holds-buland-bharat-exercise-in-arunachal-to-test-synergy-in-simulated-war-conditions-2571734.html>

# ThePrint

Wed, 03 May 2023

## **Tri Services Special Ops Division Sets up Headquarters in Bengaluru**

Created with the aim of carrying out joint operations, the Armed Forces Special Operations Division (AFSOD) has set up its headquarters in Bengaluru.

“The Armed Forces Special Operations Division was set up in Agra in its early days under the Integrated Defence Staff and has now shifted to Bengaluru,” defence officials said here.

The AFSOD is now under the Department of Military Affairs and includes the officers and men from the Army Parachute Regiment, Marine Commandos from the Navy and Garud commandos from the Indian Air Force.

The AFSOD has been carrying out extensive war games for both internal and external operations and has also been deployed for counter-terrorist operations in Jammu and Kashmir.

“Bengaluru is also well suited for operations for a force like the AFSOD as there are multiple airstrips near their location,” the officials said.

The AFSOD was one of the three defence agencies created in 2018-19 as part of the efforts to enhance jointness and integration among the forces.

The tri-services special forces recently carried out war games near the chickens’ neck area near the Siliguri corridor and have been regularly practising operations in the Andaman and Nicobar Island territory.

The troops under the division have also held exercises near the Pakistan border in the Kutch area of Gujarat.

The AFSOD has also now started preparing for external exigencies like the one which happened in the 1980s in Maldives.

<https://theprint.in/india/tri-services-special-ops-division-sets-up-headquarters-in-bengaluru/1553923/>



*Wed, 03 May 2023*

## **Rajnath Singh Lays Foundation Stone of Key Coast Guard Facility in Maldives**

Defence minister Rajnath Singh and his Maldivian counterpart Mariya Didi on Wednesday laid the foundation of a harbour for the coast guard of that country at Sifavaru to boost its maritime security capabilities, at a time when China is attempting to step up its presence in the Indian Ocean Region (IOR) by sending more warships on deployments and also taking up projects in the region, officials familiar with the matter said on Wednesday.

India and the Maldives signed a pact for the development of the coast guard facility in 2021 when New Delhi also extended a \$50 million line of credit to the Maldives for defence projects.

The development of the coast guard Ekatha harbour and repair facility at Sifavaru is one of the biggest grant-in-aid projects of India, the two sides said in a joint communique on the concluding day of Singh’s three-day visit to the archipelago.

“The ministers agreed to explore additional avenues for cooperation, including defence trade, capacity building and joint exercises. They also discussed the need to promote people-to-people contacts and exchanges between the armed forces of both countries,” it said.

The coast guard facility is expected to end the practice of the Maldives sending its vessels abroad for maintenance. In the absence of a navy, the coast guard functions as the armed maritime

component of the Maldives National Defence Force (MNDF), which has received patrol vessels and maritime surveillance aircraft from India.

India's maritime diplomacy in the IOR has capacity building, capability enhancement and collaborative efforts as some of its key pillars, and the paradigm that New Delhi follows is very different from other big powers and is premised on "cooperation rather than competition, partnership not power games," said maritime affairs expert Commodore Srikant Kesnur (retd).

"While some distant hegemonic powers seek to create seemingly attractive projects that result in debt and long-term entrapment, India offers an alternative based on meeting common threats in the IOR, building on shared values and interests," Kesnur said. In what many experts describe as China's 'debt-trap diplomacy,' mounting debts have led countries such as Sri Lanka, and Pakistan to give control of territories, which are of strategic significance, to China.

"Our ties with the Maldives are special and after Operation Cactus in 1988 the two countries have been particularly close," he added.

In November 1988, the Indian Air Force airlifted the Indian Army contingent that took part in Operation Cactus that was launched to help thwart a coup attempt involving mercenaries in the Maldives. The operation was carried out at extremely short notice, and by night, to an unfamiliar airfield in a foreign country.

Singh on Tuesday handed over a fast patrol vessel and a landing craft assault to the MNDF and described the delivery of the two indigenous vessels as a symbol of the shared commitment of the two countries towards peace and security in the IOR.

The fast patrol vessel, capable of coastal and offshore surveillance at high speeds, was commissioned as MNDF Coast Guard ship Huravee.

During Singh's visit, both ministers reaffirmed the importance of maintaining peace, stability and security in the region and recognised the need to work together to address common security challenges, the joint statement said.

"They underscored the importance of respecting international law and rules-based international order and expressed their commitment to upholding these principles."

India, which is keeping tabs on China's moves in the South China Sea, is taking steps to ensure that the Chinese navy doesn't muscle its way into the Indian Ocean where combat-ready Indian warships are carrying out round-the-clock surveillance for any unusual activity.

From carrying out naval drills with like-minded countries to reaching out to states in the IOR, the Indian Navy is focusing on checking China's rising ambitions in the region and sending out a strong message that Beijing's power play in South China Sea cannot be replicated in the Indian Ocean.

<https://www.hindustantimes.com/india-news/india-and-maldives-lay-foundation-for-coast-guard-harbour-amid-china-s-rising-presence-in-the-indian-ocean-region-101683122251246-amp.html>

## THE TIMES OF INDIA

*Thu, 04 May 2023*

### **Eye on China, India Boosts Defence Ties with Male**

India and the Maldives on Wednesday agreed to 'deepen their cooperation' in the defence and security domains, while underscoring the significance of respecting the international laws and rules-based order, amid China's growing influence into the Indian Ocean Region (IOR).

After defence minister Rajnath Singh handed over a fast patrol vessel and a landing craft to the Maldives on Tuesday, he and his counterpart Mariya Didi on Wednesday also jointly laid the foundation stone for the Maldives National Defence Force (MNDF) Ekatha harbour. The development of the coast guard harbour and repair facility at Sifavaru is one of the biggest grant-in-aid projects of India.

On Wednesday, in a joint communique, the two countries reaffirmed the importance of maintaining peace, stability and security in the region and recognised the need to work together to address common security challenges.

<https://timesofindia.indiatimes.com/india/eye-on-china-india-boosts-defence-ties-with-male/articleshowprint/99970339.cms>



Wed, 03 May 2023

## **Rajnath Singh Hails India-Maldives Ties after Gifting 2 Defence Platforms to Male**

Defence Minister Rajnath Singh handed over two 'Made in India' defence platforms and held bilateral talks to enhance defence cooperation and strengthen the partnership between India and Maldives when he met his counterpart Mariya Didi during his three-day visit to the neighboring country.

Singh described the handing over of the two 'Made in India' platforms as a symbol of the shared commitment of both nations and their objectives towards peace and security in the Indian Ocean Region (IOR).

"India has emerged as a leading defence exporter in recent years. A defence manufacturing ecosystem has been created which has the advantage of abundant technical manpower. We produce world-class equipment to meet not only our own needs, but also for exports. India's commitment to supporting the Maldives will only get stronger with time," Singh had said during the handover ceremony which was also attended by President of Maldives HE Solih.

Notably, Prime Minister Narendra Modi had announced the provision of the replacement ship for the aging Huravee, during President Solih's visit to India back in 2022. On Singh's meeting with Solih, the defence ministry in Delhi said the Maldivian President expressed gratitude for India's continued aid and support to the country in various sectors, stating that it is a testament to New Delhi's special regard for it.

In his remarks, Singh also said India's commitment to support the Maldives will only get stronger with time and noted that the handing over of the two 'Made in India' platforms to the MNDF is a symbol of the shared commitment of the two countries towards peace and security in the Indian Ocean Region.

"The India-Maldives relationship is truly special. Our relationship has withstood the test of time and we have always supported each-other in the hours of need," Singh said. The fast patrol vessel, capable of coastal and offshore surveillance at high speeds, was commissioned as MNDF Coast Guard ship Huravee.

<https://www.hindustantimes.com/india-news/defence-minister-rajnath-singh-strengthens-india-maldives-partnership-with-bilateral-talks-and-made-in-india-defence-platform-handover-101683107666287.html>



## IAF Chief Meets Lankan President and Prime Minister, Discusses Avenues for Deepening Cooperation in Defence Sphere

Indian Air Force chief Air Chief Marshal V R Chaudhari has met Sri Lankan President Ranil Wickremesinghe and Prime Minister Dinesh Gunawardena and discussed avenues for deepening bilateral cooperation and engagements in the defence sphere. The Chief of Air Staff arrived here on Monday on a four-day official visit to Sri Lanka. He is visiting Sri Lanka at the invitation of Air Marshal SK Pathirana. "As part of his ongoing visit to Sri Lanka, the CAS Air Chief Marshal VR Chaudhari met the Honourable President, the State Minister of Defence, the National Security Advisor as well as the Commanders of Sri Lankan Air Force and Navy," the Indian Air Force tweeted. "Air Chief Marshal VR Chaudhari #CAS @IAF\_MCC called on President H.E @RW\_UNP. Discussed avenues for deepening cooperation and engagements in the defence sphere," the Indian High Commission in Colombo tweeted.

"The bilateral talks assured IAF's steadfast commitment to Sri Lanka at all times when India is called upon. The CAS also gave a talk at the prestigious Sri Lankan National Defence College," the Indian Air Force said in another tweet.

Air Chief Marshal Chaudhari also met Sri Lankan Prime Minister Gunawardena who said that India is the 'First Responder' in the region and acknowledged the significant role of the Indian Air Force. "ACM VR Chaudhari #CAS @IAF\_MCC called on H.E PM @DCRGunawardena. H.E. PM underlined that (India) is the 'First Responder' in the region and acknowledged the significant role of @IAF\_MCC in this regard. CAS reiterated the commitment of @IAF\_MCC towards deepening (India-Sri Lanka) defence ties," the Indian High Commission tweeted.

On Tuesday, as part of India's commitment towards capacity building of the Sri Lanka Armed Forces, Chaudhari presented AN-32 propellers to ensure high operational readiness of the aircraft held with the Sri Lanka Air Force. He also met State Minister of Defence Premitha Bandara Tennakoon and Chief of Staff and Advisor on National Security Sagala Ratnayaka.

The visit by the Indian Air Force chief will enhance the existing professional ties and bonds of mutual cooperation between both nations, an official statement said.

<https://economictimes.indiatimes.com/news/defence/iaf-chief-meets-lankan-president-and-prime-minister-discusses-avenues-for-deepening-cooperation-in-defence-sphere/articleshow/99962090.cms>



## Will HAL's RUAV-200 Helicopter Drone Achieve Military-Grade Capabilities?

By Manish Kumar Jha

Indian army has called for robust military-grade drones for deployment at high-altitude zones. This is significant as the army has well-defined the scale of technological components which can withstand the rigours of a complex operational environment.

The overall specification marks much broader capabilities which must embrace battlefield reconnaissance, goal positioning, illuminating, communication relay, and battle harm evaluation. Possibly, as the HAL official explained, “It could be and as a superb accomplice for tanks, infantry combating autos, and artillery.”

A Request for Information (RFI) outlines the requirement which was issued in 2022 under the Defence Acquisition Procedure (DAP) 2020. The RFI clearly states the indigenous content (IC) of at least 50% on a cost basis of the base contract of the final equipment.

The major challenge remains for achieving high-altitude operational capabilities in mountainous areas spread across the heavy wind and unpredictable weather. Especially in the case of logistics drones, the demand for the higher ceiling and extreme operating temperature ranges (-35 to 55 °C) calls for a fully autonomous unmanned vehicle (UAV).

### **Drones challenge: RUAV-200**

The Indian army specified it as a Rotary UAV (RUAV) with a fuel engine. As per details under the Request for Proposal (RFP), the Ministry of Defence (MoD) further clarifies the 163 LD must have the capability to launch from an altitude not less than 4000 m Above Mean Sea Level-AMSL). In addition, another 200 LD Medium Altitude must be capable of launching from an altitude not less than 3000 m AMSL in the Buy (Indian) category under Emergency Procurement through Fast Track Procedure.

Lately, Indian public sector defence entity, Hindustan Aeronautics Limited (HAL) and IIT Kanpur have come with the Rotary UAV (RUAV)-200. The HAL claimed to develop it within the timeframe, however, can it deliver the stringent requirement as outlined?

RUAV-200 is a coaxial, rotary-wing, fuel-engine UAV, and is designed as an LD (HA). For RUAV-200, HAL has also partnered with DRDO alongside IIT Kanpur.

Firstly, according to the information, the RUV -200 will have a max take-off weight of 200 Kg and an endurance of 3 hours. In terms of operational parameters, it has an operating temperature range between -35 to 55 °C.

The RUAV mounts an electro-optical day/night camera for reconnaissance and surveillance missions. One of the key elements of the RUAV is the proven ability to carry a payload capacity of 40 Kgs and a max range of 400 Km with a service ceiling of 6000 m in high-altitude terrain. However, as per the RFP, the payloads include broad specifications, which would include medical supplies, equipment spares, military equipment, and ammunition. There is not much clarity if the HAL has incorporated such elements in an autonomous mode. The RUAV can achieve a 100kmph speed which is important in covering wide terrain in a shorter time.

Reports suggest that the propulsion system for RUAV-200 is defined as an endurance of 180 minutes, having 52 kg of Dry weight which can have a peak energy output of 34 KW and steady energy output of 30 KW.

In addition, the HAL is also working on a plan to convert it into armed drones with next-generation network-centric capabilities which it has gathered sufficient technical know-how over the years.

As per the information from HAL, the RUAV-200 will have its first flight by June 2022 and the design has been fine-tuned for high-altitude operations.

With combat firepower and the futuristic role of a potential alignment with machine weapons or anti-tank missiles, air-to-surface missiles it is going to prove the industrial capability of achieving such military grade-high performance UAVs.

<https://www.financialexpress.com/business/defence-will-hals-ruav-200-helicopter-drone-achieve-military-grade-capabilities-3072892/>

Wed, 03 May 2023

## **Indian and Chinese Defence Ministers' Meet, but Differences Persist**

*By Farooq Wani*

Last week has been an interesting one, insofar as Sino-Indian relations are concerned for two reasons. One, despite the on-going border tensions between the elephant and the dragon, Chinese Defence Minister Gen Li Shangfu flew down to attend the SCO Defence Ministers' meeting, and two, he had a bilateral dialogue with his Indian counterpart Rajnath Singh.

While nothing spectacular emerged from Gen Shangfu's visit and the interaction between the two defence ministers, the one thing that's become amply clear is that New Delhi isn't being cowed down by Chinese belligerence. So, while both countries spoke in one voice on the need to eliminate the threat of terrorism and fix accountability on those who aid or fund terror, they remain divided on the Sino-Indian border issue.

Though Beijing has been talking about peace and normalcy with India, its duplicity isn't hidden from the international community and this was palpable during Gen Shangfu's visit. Symbolism is an important ingredient of diplomacy and the Chinese defence minister could have at least given Beijing's peace charade a semblance of respectability by the customary wreath laying at the National War Memorial. However, Gen Shangfu didn't bother to do so.

There is no doubt that the Sino-Indian border issue is a serious one. India and China fought a war in 1962, followed by the 1967 bloody border clashes in the Nathu La area of Sikkim. In 1986-87, there was a stand-off between the Indian army and Peoples' Liberation Army (PLA) of China in the Sumdorong Chu Valley bordering the Tawang district in Arunachal Pradesh. This was followed by similar incidents at Doklam in 2017 and more recently, at Galwan in 2020.

The stiffness in response and body language, according to analysts, was all pervading on both sides during General Li's five-day trip. It is clear as daylight that both sides are weighed down by growing border tensions, increased defence expenditures and differing opinions on a host of other issues, including maritime matters relating to the Indo-Pacific Region (IOR), the China Pakistan Economic Corridor (CPEC) and Belt and Road Initiative (BRI).

China is feeling a degree of unease due to India's rapid economic progress and is also suspicious of what it perceives as New Delhi's growing proximity to the United States. However, while it's apparent that New Delhi is in no mood to become part of US led anti-China lobby, it has become more wary of China's physical attempts to forcibly fulfil its territorial ambitions and as such has justifiably enhanced its defensive capability along the Line of Control (LAC).

Gen Shangfu's seemingly reconciliatory view that Beijing sees the border as being stable and so "both sides should look to the long term put the border issue in the proper place within bilateral relations and promote an early transition of the border situation towards normalised control", failed to cut any ice. Singh had a terse and simple message for his Chinese counterpart that better bilateral ties have to be premised on the "prevalence of peace and tranquillity at the borders."

That frosty ties between the two sides persisted became evident when both ministers skipped the formality of shaking hands during a bilateral meeting and at the SCO interaction, but shook hands with their counterparts from other nations. All that India and China have achieved after 18 rounds

of military talks since the 2020 Galwan Valley clashes is just an agreement to speed up progress towards resolving the border dispute and exchange views “in an open and candid manner”.

Today, the Sino-Indian agreements of 1993 and 1996 to maintain peace along the LAC lie in tatters, thanks to Beijing’s border unprovoked transgressions in Eastern Ladakh. So, while Beijing may try and tell the world that’s all well on the LAC, New Delhi has made it clear that things here are far from normal, and Beijing doesn’t like India’s plain speak as it exposes China as the sole architect of this problem that could have regional and even global ramifications.

At the multilateral level, the focus predictably was on the issue of terrorism, with Rajnath Singh being emphatic about New Delhi’s objections to any nation sheltering terrorists and encouraging proxy wars in the neighbourhood to keep the region destabilised and imbalanced. This, he said, has the potential to radicalise the next generation and stymie socio-economic progress of a society, or societies.

“If we want to make SCO a stronger and more credible international organisation, our top-most priority should be to effectively deal with terrorism,” he said.

In an indirect reference to China, Singh said that violation of existing agreements has eroded the entire basis of bilateral relations and disengagement at the border, and strongly advocated status quo ante on troop deployment as it’s a logical way to facilitate de-escalation tension along the LAC. Though no breakthrough on the border issue may have been reached, both India and China have agreed to keep all channels of communication open to work towards mutually acceptable resolution of all disputes. Since both sides have dug in their heels, an early outcome is unlikely, but there’s no reason to give up hope.

Avoiding conflict and confrontation on the border at all costs is paramount, especially at a time when all eyes are on an economically struggling Europe because of the Russo-Ukraine War, and luckily both China and India have taken the wise decision of ensuring that their troops don’t come in physical contact as the same could make things go out of control.

<https://www.financialexpress.com/business/defence-indian-and-chinese-defence-ministers-meet-but-differences-persist-3072958/>

## THE TIMES OF INDIA

Wed, 03 May 2023

### **First ever ASEAN India Maritime Exercise: Growing Maritime Cooperation**

*By S D Pradhan*

In the current security environment, maritime security for India has assumed greater importance than ever before. India is not only the net-security provider for the Indian Ocean but also has an interest in the entire Indo-Pacific because of its increasing demand for trade and economic growth. The South China Sea (SCS)/East Sea (ES) occupies a central position for India’s trade. India’s about 55% sea-borne passes through this region. Indian Naval strategy too gives importance to the protection of SCS/ES.

Since the 1990s, when India adopted ‘Look East Policy’, Southeast Asia has come into India’s sharper focus. However, when India adopted ‘Act East Policy,’ the entire ASEAN region became valuable for the growth of commerce and for the development of the Northeast. The connectivity

projects were taken up for quick implementation. The progress on the Kaladan water-way is an example of India's focus on the east, though the road is yet to be completed. India is also trying to complete projects connected with the Mekong-Ganga Cooperation.

The realisation of the importance of maritime security pushed India to look for stakeholders for cooperation in Southeast Asia and to have a new security architecture in the region. PM Modi has been pressing for this in all bilateral and multilateral dialogues. India reached out to ASEAN countries for developing defence capabilities and capacities through training and assistance for search and rescue operations. The Tsunami of 2004 brought to the fore the vulnerabilities of Southeast Asian nations. India engaged Southeast Asian nations particularly Malaysia, Singapore, Thailand, and Indonesia under the rubric of Indian Ocean Naval Symposium (IONS), which started in 2008, and is one of the important engagements to integrate the Indian Ocean with the Pacific Ocean. India's engagement with the South Pacific countries as well as with Papua New Guinea and Timor Leste indicates the expanding horizons of India's Act East policy.

India believes that the Southeast Asian nations must be able to protect their interests, hence focusing on maritime cooperation with a view to enhance interoperability and their defence capabilities. India has defence agreements with nine out of ten ASEAN countries. India is also carrying out exercises with them. With Singapore, India conducts SIMBEX exercises regularly. With Thailand and Indonesia there have been regular coordinated patrols along the Andaman Sea, which are seen as a signal of their thriving relationship with India. With countries such as Vietnam there have been regular defence interactions at the highest levels and there have been port calls by Indian ships to various ports of Vietnam. Defence relations with Laos and Cambodia have been strengthened.

The Chinese aggressiveness in the region is also India's focus. India has been opposing the Chinese encroaching activities into the EEZs of other nations, creation of artificial islands, their militarisation, and coercive actions against the ASEAN countries. It had been consistently supporting the finalisation of the Code of Conduct (CoC) and is pressing that the interests of non-parties to the conflict be protected. Since the 2016 PCA's Ruling, India has been pressing for its implementation. India's interest is in peace and security of the region. PM Modi, in the 2021 UNSC meeting pressed for resolution of their disputes on maritime issues through international arbitration mechanisms.

It is in this background that the first ASEAN-India maritime exercise is taking place. It is a comprehensive exercise comprising two phases-the Harbour phase and Sea phase. The Harbour phase will see navy personnel participate in visit, board, search and seizure, and humanitarian assistance and disaster relief operations. The Sea phase will witness the participating ships tracking the movement of simulated vessels of interest, cued by alerts from the ASEAN and the Royal Singapore Navy's monitoring systems. In addition, the participating forces will be practising the Code for Unplanned Encounters at Sea (CUES). In all, nine ships, six aircraft, and about 1800 personnel are taking part in the exercise.

The Ministry of Defence's statement says: "AIME 2023 will provide an opportunity for Indian Navy and ASEAN navies to work together closely and conduct seamless operations in the maritime domain." Significantly, INS Delhi, India's first indigenously-built guided missile destroyer and INS Satpura, an indigenously-built guided missile stealth frigate are participating in the exercise. These ships are fitted with state-of-the art weapons and sensors. They will also participate in the International Maritime Defence Exhibition (IMDEX-23) and International Maritime Security Conference (IMSC) being hosted by Singapore. The visit of the Indian Naval Chief to Singapore for the exercise as well as to take part in the International Maritime Defence Exhibition (IMDEX-23) and International Maritime Security Conference (IMSC) being hosted by Singapore, reflects

importance that India gives to this exercise. India is the fourth country to have maritime exercise with ASEAN after the US, Russia, and China.

India is showcasing its defence production capabilities with a view to boosting its defence export. The growth of India's indigenous defence production capabilities has been exceptional in the last few years. PM Modi at the inauguration of the DefExpo 22 in Gandhinagar-India's biggest ever defence exhibition- hailed the 'the strides taken by the indigenous defence sector that marked "new India's efforts" and it marked 'the beginning of a new future that will boost India's security, economy and innovation.' He also stated that while eight years ago India was known to be biggest defence importer, now India exports defence equipment/ weapons to more than 75 countries. India has an agreement to provide BrahMos missiles to the Philippines and some other countries are showing great interest in this missile. Besides, India has also produced INS Arihant, India's first indigenous nuclear powered ballistic missile capable submarine. India has also commissioned the INS Vikrant aircraft carrier. It is not only designed and built indigenously but it also has used 76% Indian material, and it constitutes an important landmark in the growth of Indian defence production capabilities.

India and Vietnam have special relations. During the visit of Indian Defence Minister Sri Rajnath Singh in June last year, India handed over twelve high-speed patrol boats to Vietnam. India and Vietnam also inked a Memorandum of Understanding (MoU) on Mutual Logistics Support. The Indian Ministry's statement said: "In these times of increasing cooperative engagements between the defence forces of the two countries, this is a major step towards simplifying procedures for mutually beneficial logistic support and is the first such major agreement which Vietnam has signed with any country."

The overall objective of the ASEAN-India Maritime Exercise is three-fold: first, to achieve the highest level of coordination with ASEAN countries in maritime domain for facing non-traditional threats and for coordinated rescue and relief operations; second, to build their defence capabilities by making them aware of new operational manoeuvres; and third, to support the ASEAN countries in obtaining the latest advanced platforms, which India is producing. This is aimed at diversifying their imports of defence equipment. This step will result in significantly developing India's maritime cooperation with ASEAN countries and ensuring peace and security in the region.

<https://timesofindia.indiatimes.com/blogs/ChanakyaCode/first-ever-asean-india-maritime-exercise-growing-maritime-cooperation/>



*Wed, 03 May 2023*

## **C-390 Platform Flexible and Embraer's Engineering Capable to Meet Customers' Needs, says President & CEO of Embraer**

India has started looking at domestic companies as well as other countries for different weapons systems and platforms for its requirements. The focus has been on Atmanirbhar Bharat in defence and at the same time seeking for alternative suppliers at a time when the Russia-Ukraine war continues.

As far as the Indian Air Force is concerned it has started scouting around for different vendors for its requirements to meet the shortage of spares, or platforms like transport aircraft, tyres, ejection pods or propellers and more.

Brazil is one such country from where two defence companies already have joint ventures with Indian companies for ammunition and small arms. Embraer, which is considered to be the largest non-western aircraft supplier and a major player in the civil and military aviation industry of Brazil, has big plans to strengthen its position in the Asian market especially in India and China.

For India, Brazil holds an important position as it is a member state of BRICS (Brazil, India, Russia, China and South Africa) and talks are going on with the South American nation for the expansion of the existing India MERCOSUR Trade Agreement.

The Brazilian aerospace major Embraer has responded to the RFI of the Indian Air Force for Medium Transport Aircraft. It had flown its C-390 Millennium military multi-mission tactical air transport aircraft for the Aero-India show earlier this year.

Bosco da Costa Junior, President & CEO of Embraer Defense & Security shares updates with Huma Siddiqui on the sidelines of the recently concluded LAAD Defence Expo in Rio de Janeiro, Brazil.

### **Following are excerpts**

#### **The C-390 came to India in February. It is one of the aircraft being considered for the Medium Transport requirement of the Indian Air Force. What is the status so far?**

Yes, we had the chance to showcase the C-390 during Aero India. We have received the RFI from the Indian Air Force and Indian Ministry of Defence regarding the MTA program. The process is in the initial phase. They have asked for some information about what the aircraft could achieve, what their requirements are, and we are in the initial phase of conversations.

We are connecting with different stakeholders in India to study agreements and collaboration inside to enhance our case. Our aircraft uses state of the art technology for design and construction and can deliver even more for the Indian Air Force (IAF). It is important to note that the process is in an initial phase, and a strong partnership with Indian industry is important for delivery of a strong solution for the Indian Air Force.

#### **And are you looking at some local partners to build the aircraft just in case you get the deal?**

Yes. We are in the process of identifying and have been discussing with a lot of companies during Aero India. We met several executives of large companies, and we are in touch with them. We are currently organising workshops in order to investigate options for participation in the C-390 case. We are still in the initial conversation with them to materialize this collaboration. Embraer recognises the technological capability of the Indian defence industry and welcomes the opportunity for partnership. Having this partner, we are going to make our case even stronger for the Indian Air Force.

#### **It will be made as per the specifications of the Indian Air Force, right?**

Yes, the C-390 platform is very flexible, and Embraer's engineering is very capable to meet customers' needs. So, I don't see any kind of restriction to adapt the platform to meet the requests from India. By the way, we can do this in India as well using Indian engineering and tapping into the Indian industries. So, as I said before, the C-390's adaptability allows us to make the necessary changes to meet the needs of each customer.

#### **And whenever the deal is signed, can it meet the delivery timeline?**

Embraer is well prepared for that, of course. To make everything in India we must find the right capabilities and the right infrastructure. I believe it's easy to be ready for the timeline that they are requesting in the RFI. The C-390 is a modern aircraft and modern production methods coupled with the multi-mission concept contribute to an agile production line, which makes it easier to meet the delivery timeline.

### **And, Mid-air refueling?**

The C390 is a multi-mission aircraft, and its current configuration includes air-to-air refuelling using wing pods. We are currently developing a centreline boom refuelling option to meet a US requirement. The Indian Air Force can use this aircraft for air-to-air refuelling using the current configuration.

### **Is the Super Tucano also on offer to the Indian Air Force?**

We are always in contact with Indian stakeholders offering our portfolio, but we don't have any discussion in place for Super Tucano. Of course, we do believe that Super Tucano could add value for the Indian Air Force, but right now our focus is on the C-390.

### **Embraer is already present in the Indian Civilian market and AWACS. Do you think the on-going Russia- Ukraine war can have an impact of any kind?**

The current global environment brought some opportunities, mainly related to defence budgets increasing around the world. We have seen an increased interest in KC-390 and the A-29 Super Tucano from several countries recently.

Regarding India, we have a strong relationship, and I would like us to keep growing our presence in India. We have worked closely with stakeholders in the development of the ERJ145 Netra AEW&C, and our engineering team valued the collaboration with engineers in India. So, again, I strongly believe we could have a perfect match in India for a new business case for the C-390 and this is what we are looking for.

<https://www.financialexpress.com/business/defence-fe-exclusive-c-390-platform-flexible-and-embraers-engineering-capable-to-meet-customers-needs-says-president-amp-ceo-of-embraer-3072981/>



*Thu, 04 May 2023*

## **US Announces USD 300 Million Military Aid Package for Ukraine**

The United States has announced that it would send USD 300 million in security assistance to Ukraine to help the country in its fight against Russia, reported Ukraine-based Pravda. The US state department released a press statement on Wednesday (local time). In the press statement, State Secretary Antony Blinken said: "We will continue to stand with our Ukrainian partners as they defend themselves from Russia's war of aggression. Pursuant to a delegation of authority from President Biden, I am authorising our 37th drawdown of US arms and equipment for Ukraine valued at USD 300 million."

### **US military package for Ukraine's Counteroffensive**

According to the new statement that has been released on May 3 by the US government, the security assistance package would include, additional ammunition for High Mobility Artillery Rocket Systems, howitzers, artillery and tank ammunition, anti-tank weapons, rockets, small arms and ammunition, trucks and trailers to transport heavy equipment, and spare parts and other field equipment essential to strengthening Ukraine's defenders on the battlefield. Further, the latest package would help Ukraine to "bravely defend itself in the face of Russia's brutal, unprovoked, and unjustified war". "Russia could end its war today. Until Russia does, the United States and our allies and partners will stand united with Ukraine, for as long as it takes," read the statement.



According to RT news, this would be the 37th military package which has been given by the US since August 2021.

Before this military aid, the US announced USD 325 million in new military aid for Ukraine which had more artillery rounds and rockets for the High Mobility Artillery Rocket System (HIMARS). Notably, this announcement of the military package comes as Ukraine would start its counter-offensive against Russia in May. The country has been preparing for it for several months now. Meanwhile, the Ukrainian president also confirmed that the operation would begin “soon”. However, the recently leaked documents from the Pentagon have revealed that ammunition may hinder the Counteroffensive. Further, it is to be believed that the recent attempt of assassinating Putin on May 3 could be the launch of the Ukrainian Counter Offensive. However, it has been denied by Ukrainian President Volodymyr Zelenskyy that his country was responsible for what Russia says was an assassination attempt against Russian President Vladimir Putin.

<https://www.republicworld.com/world-news/russia-ukraine-crisis/us-announces-usd-300-million-military-aid-package-for-ukraine-articleshow.html>

## The Statesman

Wed, 03 May 2023

### Ukraine Implements 18% of NATO Standards: Defence Minister

Ukrainian Defence Minister Oleksii Reznikov has said that his country had implemented 18 per cent of the standards of the North Atlantic Treaty Organization (NATO).

By the end of this year, Ukraine aims to perform between 30 per cent and 35 per cent of the alliance’s standards, Reznikov was quoted by the Interfax-Ukraine news agency as saying, Xinhua news agency reported. Ukraine does not need to implement 100 per cent of the standards to become a member of the organization, he noted. According to Reznikov, none of the NATO members implemented all of the more than 1,200 standards of the alliance.

Last month, the Ukrainian parliament called on NATO to speed up Ukraine’s accession to the alliance. NATO recognised Ukraine as its Enhanced Opportunities Partner in 2020.

<https://www.thestatesman.com/world/ukraine-implements-18-of-nato-standards-defence-minister-1503177675.html>



Wed, 03 May 2023

### NATO Military Delegation Heads to Japan for Staff Talks

On the first day, the NATO delegation met with its Japanese counterparts, led by Major General Minamikawa Nobutaka. It was an opportunity for both delegations to provide a series of briefings in areas of mutual interest, such as defence planning, international cooperation, international policy planning, exercises and training and as well as recent developments in the global and regional security environments.

"These are our first military staff talks in Japan after the pandemic and I have seen firsthand that what happens in Europe matters to you, just as what happens in the Indo-Pacific region matters to NATO. Your support to Ukraine has been significant, demonstrating your engagement as a security provider on a global scale. Our security is deeply interconnected and so must be our cooperation, which is rooted in our shared values, and our shared vision – of a free, peaceful and prosperous world", highlighted Lieutenant General Diella.

The staff discussions were followed by a meeting with General Yoshihide Yoshida, Chief of Staff of the Joint Staff of the Japanese Self-Defence Forces, where NATO representatives voiced the Alliance's openness to increase the military cooperation between NATO and Japan. "In recent years, NATO and Japan have taken our partnership to the next level, including on cyber defence. Japan participates in the NATO Centre of Excellence on cyber security in Tallinn. And Japanese cyber experts recently trained with NATO Allies in Cyber Coalition, the world's largest cyber defence exercise. We have the potential to do more together, especially with the increase in hybrid threats", added Lieutenant General Diella.

The NATO delegation also visited the Peacekeeping and Training Centre, which provides specialized UN Peacekeeping Operations training to Japanese Self-Defense Forces. "In this challenging security environment, it is important to contribute to global security, work with like-minded partners and bolster our own defence capabilities. NATO is doing this and so is Japan. Japan's new National Security Strategy and National Defence Strategy, clearly, acknowledge the complex security environment and provide a strong response, with rapid advances in modern technologies. We look forward to pursuing our dialogue on defence matters, innovation and new technologies", underscored the NATO's Cooperative Security Division Director.

The visit concluded with a meeting with Ambassador Taksøe-Jensen, Head of the Danish Embassy in Japan and NATO Contact Point Embassy (CPE). CPEs are a valuable tool that contributes to NATO's outreach efforts with Partners. In every partner country, an embassy of one or more NATO Allies serve as a contact point and operates as a channel for disseminating information about the role and policies of the Alliance.

[https://www.nato.int/cps/en/natohq/news\\_214295.htm](https://www.nato.int/cps/en/natohq/news_214295.htm)

## Science & Technology News

INDIA  
TODAY

Wed, 03 May 2023

### **IIT Madras Hosts National Workshop on 'Next Generation Laser Technologies'**

The Indian Institute of Technology Madras (IIT Madras) hosted a workshop on Next Generation Laser Technologies on May 2 as part of the Golden Jubilee celebrations of the Office of Industrial Consultancy and Sponsored Research (IC&SR), IIT Madras.

The key objective was to bring together experts from across the country and discuss how India can advance in the field of Laser Systems and develop the technology indigenously.

The workshop was organised by the DRDO Industry Academia – Ramanujan Centre of Excellence (DIA-RCoE), IIT Madras, and the Department of Electrical Engineering, IIT Madras. It provided an opportunity to the research scholars, scientists, next-generation faculty, and industry captains to know about this disruptive technology which is going to be a game changer in defence technology.

Considering the domination of drones in the sky and in the sea, lasers are being explored for weapons, communication and many more applications.

In order to achieve ‘Atmanirbhar Bharat’ in this domain, the workshop intends to lay a clear approach for futuristic development after brainstorming and panel discussion among the eminent professors, industry experts, scientists and researchers for development of technology and systems for our defence services.

<https://www.indiatoday.in/education-today/news/story/iit-madras-hosts-national-workshop-on-next-generation-laser-technologies-2367936-2023-05-03>

# The Tribune

Thu, 04 May 2023

## Unlocking Treasures of the Quantum Universe

*By Parsa Venkateshwar Rao Jr*

Quantum computers, quantum communication based on quantum technology, is the buzz worldwide. Quantum technology is an attempt to harness the sub-atomic particle, photon, as a means to carry information. A photon does not have material existence like the analogue transistors in computers now in use, occupy less space, move faster and can carry far more information than its counterpart. It has been emerging as a promising new frontier for some years. The US, the EU, China and India are all in it, and so are private tech giants such as IBM, Google, Amazon, Microsoft and Nokia. They think quantum computers and quantum communication will change the tech world as we know it. So, it was not surprising that Finance Minister Nirmala Sitharaman had announced in 2020-21 Union Budget that Rs 8,000 crore, spanning five years, were being allocated to set up research and production facilities to forge ahead with quantum computers and communication, and that apart from the government, private players would take part in it as well.

On April 19, Union Minister of State for Science and Technology Jitendra Singh announced the Cabinet approval for the Rs 6,000-crore National Quantum Mission (NQM), which would undertake projects for research and development of quantum technologies.

Things have been happening at different places and levels. For example, in April 2021, the Indian Institute of Science Education and Research (IISER) in Pune set up a Technology Innovation Hub (TIH) in Quantum Technology with the support of the Department of Science and Technology (DST). It has 20 national-level institutes collaborating in research, including select IITs, the Indian Institute of Science, TIFR, Inter-University Centre for Astronomy and Astrophysics and SN Bose National Centre of Basic Sciences.

In August 2021, Minister of State for Electronics and Information Technology Rajeev Chandrasekhar had launched the Quantum Computer Simulator (QSim) toolkit to enable students and researchers to carry out work in quantum computing, one of the verticals of the government’s NQM in a ‘cost-effective manner.’ This project is a collaboration of the Indian Institute of Science, Bengaluru, Indian Institute of Technology, Roorkee, and Centre for Development of Advanced Computing (C-DAC) at Pune.

QSim is seen as an outcome of the project — Design and Development of Quantum Computer Toolkit (Simulator, Workbench) and Capacity Building. So, in more ways than one, work on quantum computers, technology and applications has taken off in several places, and, perhaps, it is good that it is not centred in any one place. But work is going on in advanced research centres and not in university science departments, a problem that has been plaguing Indian science from Nehru's days. Of course, quantum mechanics and quantum technologies will be part of the undergraduate and postgraduate science courses and they will be connected in many ways with NQM projects. It is hoped that in a bid to show quick results, the NQM managers will not focus only on technological hurdles which need to be solved to move forward. Basic science research in the diversified quantum physics field, pure mathematics and materials science is necessary, which then could lead to breakthroughs. The science bureaucrats are not ruling out international collaborations, which could be exciting. The challenge comes when the funding has to continue even if there are no quick breakthroughs, and even if some research projects reach a dead end.

That has been a key issue with science research all over the world and the Indian government has generally been short-sighted in this matter.

And it would also be futile to paint pictures of a visionary future where quantum computers hold quantum information in folds of quantum cloud formations, where infinite information is the promise. There are real challenges on the way. The base of the quantum computer — the physical structure which is very small as compared to the room-sized supercomputers of the present day — requires temperature a little above absolute zero kelvin, ie minus 273.15 degrees Celsius or minus 459.67 degrees Fahrenheit. It remains a challenge all over the world. We need a supercool atmospheric condition to maintain a quantum computer. And the qubits, the content of the quantum computers, are considered to be unstable because they can flip any time. Stabilising the qubits is another hurdle.

Realistically speaking, the capacity to build a quantum computer is limited to 50 to 100 qubits, which is far more powerful than a supercomputer, but it is too modest in terms of its potential. So, it will be years before capacity increases can be made. What is needed is patience. We cannot look over the shoulder of researchers impatiently, whether they have made the breakthrough or not. An ideal quantum computer can deliver the universe in the palm of our hands, but as a sceptical physicist observed, it is like a cold fusion which can release atomic energy at room temperature, a distinct theoretical possibility, but it remains a chimera as of now. Governments and global tech giants are sinking billions of dollars in quantum technology research. It may lead to the promised miracle, but it could be a failed project.

The problems we have been facing with global digital networks should make us aware that there is no perfect technology. We are putting in efforts in quantum technology and constructing a quantum computer to create a 'fault-tolerant' system. It does not mean that we can abandon the enterprise of unlocking the hidden treasures of the quantum universe, which makes the wildest dreams of science fiction look tame with things like quantum teleportation.

The credit, indeed, goes to Prime Minister Narendra Modi's government that it has gotten on to the quantum technology bandwagon, even as India's first PM Jawaharlal Nehru put India on the path of atomic research and nuclear power, and the then PM Indira Gandhi opened up satellite communication through timely governmental investments. But it is time to look critically at what India managed to do, and failed to do, in these two fields which can be useful on the quantum technology journey. Critical awareness and a bit of scepticism are always useful.

<https://www.tribuneindia.com/news/comment/unlocking-treasures-of-the-quantum-universe-504475>

