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Global endorsement for Make in India as Philippines okays BrahMos Anti-Ship Missile System for its navy

Notice of Award has been communicated to BrahMos officials by the Philippines' Department of National Defense said on Friday.

New Delhi: In what may be viewed as a major boost to India's defense capability building prowess, the Philippines has accepted Indian BrahMos Aerospace Pvt Ltd's proposal worth USD 374.9 million to supply a Shore-based Anti-Ship Missile System Acquisition Project for its navy. Notice of Award has been communicated to BrahMos officials by the Philippines' Department of National Defense said on Friday.

The development comes on the backdrop of the government's push for Make in India in defense and its stress on *Aatmanirbhar Bharat* - meaning self-reliant India program.

The notice award for the contract to procure a Shore-based Anti-ship Missile system for the Philippines Navy sought a response from BrahMos Aerospace within 10 days. BrahMos, a Joint Venture between India (DRDO) and Russia (NPOM) for the development specializes in the production of supersonic cruise missile systems. BrahMos is the potent offensive missile weapon system already inducted into the Armed Forces and is used by the Indian Navy, Indian Air Force as well as Indian Army.



BrahMos: A land, air, sea platform

The ability of the system to be integrated with land, air, and sea platforms gives the system the much-needed versatility in modern-day warfare. Most recently, the Indian Navy fired a naval variant of BrahMos from its destroyer INS Visakhapatnam.

“Successful test-firing of the extended-range BrahMos Supersonic Cruise missile from INS Visakhapatnam, Indian Navy’s newest indigenously-built guided-missile destroyer, represents a twin achievement: Certifies the accuracy of the ship’s combat system and armament complex. Validates a new capability the missile provides the Navy and the Nation,” the Indian Navy had said in a tweet.

<https://www.timesnownews.com/india/article/global-acceptance-for-make-in-india-as-philippines-okays-brahmos-anti-ship-missile-system-for-its-navy/849280>

Philippines approves purchase of BrahMos cruise missiles with India for its navy

- *BrahMos is the main weapon system of the Indian Navy warships and has been deployed on almost all of its surface platforms*
- *BrahMos missile flies at a speed of 2.8 Mach or almost three times the speed of sound*

Philippines on Friday accepted BrahMos Aerospace Pvt Ltd's to supply Shore-Based Anti-Ship Missile System Acquisition Project for its navy. The proposal is worth \$374.9 million. The Notice of Award has been communicated to BrahMos officials by the Philippines Department of National Defense.

This week, on January 11, the Indian Navy and Defence Research and Development Organisation (DRDO) successfully test-fired BrahMos Supersonic Cruise missile.

The missile is a joint venture between India and Russia where DRDO represents the Indian side.

The missile was tested from INS Visakhapatnam which is the latest warship of the Indian Navy inducted recently.

BrahMos is the main weapon system of the Indian Navy warships and has been deployed on almost all of its surface platforms.

An underwater version is also being developed which will not only be used by the submarines of India but will also be offered for export to friendly foreign nations.

BrahMos missile flies at a speed of 2.8 Mach or almost three times the speed of sound.

<https://www.livemint.com/news/india/philippines-approves-purchase-of-brahmos-cruise-missiles-with-india-for-its-navy-11642131922259.html>



BRAHMOS cruise missile has been jointly developed by India and Russia. (PTI) (HT_PRINT)

अमर उजाला

चीन को झटका: भारत से ब्रह्मोस क्रूज मिसाइल खरीदेगा फिलीपींस, 374.9 मिलियन अमरीकी डॉलर के प्रस्ताव को दी मंजूरी

सार

दक्षिण चीन सागर में चीन के साथ फिलीपींस का अधिकार क्षेत्र को लेकर विवाद चल रहा है। रिपोर्ट के मुताबिक, ऐसे में ब्रह्मोस मिसाइल को फिलीपींस अपने तटीय इलाकों में तैनात कर सकता है।

विस्तार

नई दिल्ली: दक्षिणी चीन सागर में अपनी दादागिरी दिखा रहे चीन को बड़ा झटका लगा है। चीन के आक्रामक रवैये को झेल रहे फिलीपींस ने भारत के साथ दुनिया की सबसे तेज सुपरसोनिक एंटी शिप क्रूज मिसाइल ब्रह्मोस की खरीद को मंजूरी दे दी है। न्यूज एजेंसी एएनआई के मुताबिक, फिलीपींस के राष्ट्रीय रक्षा विभाग द्वारा ब्रह्मोस के अधिकारियों को इसकी सूचना भेज दी गई है। ब्रह्मोस मिसाइल के लिए यह पहला विदेशी ऑर्डर है। यह सौदा 374.9 मिलियन अमरीकी डॉलर का है।

चीन के खिलाफ भारत पर भरोसा

इस सौदे में सबसे अहम बात यह है कि अमेरिकी सहयोगी देश फिलीपींस ने चीन के खिलाफ अपनी सैन्य तैयारी के लिए भारत-रूस द्वारा मिलकर बनाई गई ब्रह्मोस मिसाइल पर भरोसा जताया है। ब्रह्मोस सुपरसोनिक मिसाइल ध्वनि की रफ्तार से तीन गुना तेज गति यानी 4321 किलोमीटर प्रति घंटा की रफ्तार से मार करने में सक्षम है।

चीन के खिलाफ तटीय इलाकों को सुरक्षित करेगा फिलीपींस

फिलीपींस को आंखे दिखा रहे चीन को इस सौदे से बड़ा झटका लगा है। दरअसल, दक्षिण चीन सागर में चीन के साथ फिलीपींस का अधिकार क्षेत्र को लेकर विवाद चल रहा है। रिपोर्ट के मुताबिक, ऐसे में ब्रह्मोस मिसाइल को फिलीपींस अपने तटीय इलाकों में तैनात कर सकता है।

और देशों से भी जल्द मिल सकते हैं खरीद के ऑर्डर

सूत्रों का कहना है कि डीआरडीओ (रक्षा अनुसंधान एवं विकास संगठन) और ब्रह्मोस एयरोस्पेस इस मिसाइल का मित्र देशों को निर्यात करने के लिए पूरा जोर लगा रहे हैं। डीआरडीओ ने हाल ही में अमेरिका के साथ मेड इन इंडिया रडार का सौदा भी किया था। भारत को अन्य मित्र देशों से भी मिसाइल प्रणाली के ऑर्डर जल्द मिलने की उम्मीद है क्योंकि कुछ और देशों के साथ भी इसे लेकर सौदेबादी अपने अंतिम दौर में है। इस मिसाइल की क्षमताओं में वृद्धि हुई है और कई आधुनिक विशेषताओं से लैस किया गया है। चीन का एक और पड़ोसी देश वियतनाम भी भारत से यह मिसाइल सिस्टम खरीद सकता है।

<https://www.amarujala.com/india-news/defence-export-philippines-accepted-brahmos-aerospace-pvt-ltd-s-proposal-to-supply-anti-ship-missile-system-project>



सुपरसोनिक क्रूज मिसाइल ब्रह्मोस - फोटो :
AMAR UJALA



Fri, 14 Jan 2022

Monster missile! Why BrahMos cruise missile is a 'game-changer' for Indian military after S-400 System, Rafale Fighter?

After ending 2021 on a high note, India's Defence Research and Development Organisation (DRDO) ushered in the New Year with the successful testing of the BrahMos supersonic cruise missile and the man-portable anti-tank guided missile (MPATGM).

The Indian Navy's newly commissioned INS Visakhapatnam test-fired an extended range sea-to-sea variant of the BrahMos missile on January 11.

The launch was hailed as a success by the Navy. "Successful test-firing of the extended-range BrahMos Supersonic Cruise missile from INS Visakhapatnam, Indian Navy's newest indigenously-built guided-missile destroyer, represents a twin achievement: Certifies the accuracy of the ship's combat system and armament complex. Validates a new capability the missile provides the Navy and the Nation," it tweeted.

INS Visakhapatnam was commissioned into the Indian Navy in November last year. It is the first of the four stealth guided-missile destroyers under Project 15B, Hindustan Times reported previously.

Apart from the BrahMos, INS Visakhapatnam can fire Israeli-made Barak 8 long-range surface-to-air missiles.

Earlier in December 2020, Kolkata-class stealth destroyer INS Chennai and Rajput-class destroyer INS Ranvijay tested the naval variant of the BrahMos in October and December 2020, respectively.

“The robustness of @indiannavy mission readiness is reconfirmed today after successful launch of the advanced version of BrahMos Missile from INS Vishakhapatnam today. I congratulate the wonderful teamwork of @indiannavy @DRDO_India & @BrahMosMissile,” Defense Minister Rajnath Singh tweeted on January 11.



BrahMos missile (via Wikipedia)

Rafale-M (Marine) OR F-18 Super Hornet: Indian Naval Commander Decodes the Ideal Fighter Aircraft For INS Vikrant

These supersonic missiles, which were first introduced in 2001, can be launched from submarines, ships, aircraft, and land platforms.

Meanwhile, DRDO on January 11 successfully flight tested the final deliverable configuration of man-portable anti-tank guided missile (MPATGM). The indigenously developed ATGM is a low-weight ‘fire and forget’ missile, PTI reported.

Why BrahMos Naval Variant A Game-Changer?

BrahMos, which was originally deployed on Navy warships in 2005, has the potential to hit sea-based targets beyond the radar horizon.

This version of the missile is designed to fire from moving/stationary assets in either a vertical or horizontal mode, targeting both land and water targets. The missiles, which travel at 2.8 Mach, or nearly three times the speed of sound, greatly improve the ships’ ability to engage long-range targets.

The Indian Navy has picked the BrahMos as its primary ship-launched cruise missile, with all frigates and destroyers being built to carry the BrahMos in vertical-launch canisters, with eight missiles per frigate and 16 missiles per destroyer, as previously stated by the EurAsian Times.

India has successfully tested the missile from various platforms since the start of the border standoff with China in May 2020.

The BrahMos supersonic cruise missile’s improved “sea-to-sea variant” has a range of 350 to 400 kilometers, which is more than the other existing version that has a maximum range of 290 kilometers.

The latest missile can be launched horizontally or vertically from a moving or stationary platform, and it can hit both marine and land targets. This adds more versatility to this indigenous missile and increases the ease of launch as well as its maneuverability.

The latest test of BrahMos was conducted a day before India and China began their 14 round of military commander-level talks in a bid to find a solution to the protracted border standoff, which has entered its second winter.

While the Indian side is eager for a quick resolution, the Chinese seem to be more interested in a status-quo that gives them more access to territory that is claimed by both sides but falls under the Indian jurisdiction.

BrahMos Could Enable Deterrence In IOR

Chinese presence in the Indian Ocean Region has seen an upward trajectory with the country’s military base in Djibouti and its back-channel entry into the IOR through Pakistan’s Gwadar port.

The new Navy Chief of India, Admiral R Hari Kumar, had earlier said that his force is keeping an eagle eye on Chinese naval forays into the IOR and is fully capable and poised to tackle any security threat.

Defense expert, Col. Ajai Shukla (retired), had previously written that the BrahMos could be useful in the early stages of a conflict with China for pinpoint strikes on heavily defended targets that are too dangerous for manned fighter aircraft to attack, such as airbases, headquarters, key roads, and railways, or logistics dumps.

The rising acrimony between India and China, the conflict at the border, China's ever-growing maritime fleet, its superior naval power and its transfer of advanced warships and other assets to its all-weather ally Pakistan could be the factors behind India's continued testing and upgrade of various weapon systems.

Earlier, as EurAsian Times reported, Chinese experts voiced 'deep concerns' after the Indian military deployed BrahMos supersonic missiles along the Line of Actual Control (LAC). They appeared to caution New Delhi of "new barriers" in border talks if India proceeded with the transportation of its most advanced missile to the western side of LAC.

Global Customers for BrahMos

The BrahMos is a medium-range ramjet supersonic cruise missile that may be launched from a submarine, ship, plane, or land.

It is considered the world's fastest supersonic cruise missile. This has been developed by BrahMos Aerospace, a joint venture between NPO Mashinostroyeniya of Russia and India's DRDO. Both the land-based and ship-based variants are already in use and a hypersonic variant remains under development.

According to reports, numerous Southeast Asian countries, including Thailand, Indonesia, and Vietnam, are interested in the land and sea-based variants of BrahMos. The list of potential buyers also includes Argentina, Brazil, South Africa, the United Arab Emirates and Saudi Arabia

The case for supplying BrahMos missiles to the Philippines is already before the Cabinet Committee for Security, which would give the final clearance. The latest test could also be aimed at attracting the attention of prospective customers although the export version of the BrahMos is expected to be of a lower range (280 km).

Nitin J Ticku, managing editor and defense expert with The EurAsian Times says BrahMos missiles are easily the 'exportable' weapons in the Indian armory much ahead of others including LCA Tejas.

They already are 'monster missiles' however once India develops the hypersonic version of BrahMos, this could be another game-changing technology for the Indian military after the acquisition of Russian S-400 systems and French Dassault Rafale fighters.

<https://eurasianimes.com/brahmos-cruise-missiles-is-a-game-changer-for-indian-military/>



Fri, 14 Jan 2022

कोरोना महामारी में भी नहीं थमी मिसाइलों की सांसें: भारत के डीआरडीओ को लोहा मानने लगा है सारा विश्व

By Babita Kashyap, लावा पांडे

बालेश्वर: कोरोना जैसे महामारी से आज एक ओर जहां विश्व के कई देश तड़प रहे हैं तो वहीं कई देश कराहने लगे हैं। विगत दो वर्षों से इस महामारी के चलते लाखों लोगों की जान चली गयी। वहीं दूसरी ओर विश्व के प्रायः सभी देशों के आर्थिक परिस्थिति भी लड़खड़ा गई है। आज भी लोगों के मन में डर और भय बसा है कि कहीं इस महामारी के चलते उनकी जान न चली जाए। आज हम यहां बात करेंगे इस महामारी ने एक ओर जहां सारे विश्व को डराया वही भारत का डीआरडीओ जिसे आज सारा विश्व मिसाइलों के क्षेत्र

में लोहा मानने लगा है इस महामारी से ना डरते हुए ना भय करते हुए डीआरडीओ ने भारत का ब्रह्मास्त्र कहे जाने वाला अग्नि 5 मिसाइल से लेकर बैलेस्टिक और क्रूज़ सीरीज की कई हल्के और भारी-भरकम मिसाइलों का सफलतापूर्वक परीक्षण किया।

सारे मिसाइल स्वदेशी ज्ञान कौशल से निर्मित

सुबह हो या शाम दिन हो या रात भारतीय वैज्ञानिकों ने यह साबित कर दिया कि किसी भी समय और किसी भी मौसम में भारतीय मिसाइलें दुश्मनों के किसी भी आक्रमण का मुंहतोड़ जवाब देने में सक्षम है। केवल सन 2021 वर्ष में भारत ने एक दर्जन से ज्यादा मिसाइलों का परीक्षण करके भारतीय डीआरडीओ ने अपनी काबिलियत का परिचय दे डाला है। सबसे खास बात यह है कि मिसाइल टेक्नोलॉजी के लिए भारत को अब विदेशी देशों पर निर्भर नहीं रहना पड़ता है बल्कि जितने भी मिसाइलों का परीक्षण भारत ने किया है सारे मिसाइल स्वदेशी ज्ञान कौशल से निर्मित है।

साल के अंत में मिसाइलों के परीक्षण की सुनामी

वर्ष 2021 में साल के शुरुआत में मिसाइलों का परीक्षण का दौर धीमा था लेकिन साल के अंत होते-होते मानो मिसाइलों के परीक्षण की सुनामी आ गई थी। इस दौरान भारतीय डीआरडीओ ने सतह से सतह में मार करने वाली मिसाइल सतह से हवा में मार करने वाली मिसाइल हवा से हवा में मार करने वाली मिसाइल हवा से सतह में मार करने वाली मिसाइलों का जबरदस्त और सफलतापूर्वक परीक्षण कर डाला। इसके अंतर्गत कम दूरी की बैलिस्टिक मिसाइलें मध्यम दूरी की बैलिस्टिक मिसाइलें तथा भारत का ब्रह्मास्त्र कहे जाने वाला अग्नि 5 मिसाइल का सफलतापूर्वक परीक्षण के साथ ही हाइपरसोनिक मिसाइलों का परीक्षण किया गया।

नहीं कि पड़ोसी देशों गीदड़ भभकी की परवाह

यहां बता दें कि भारत ने पड़ोसी देशों के गीदड़ भभकी की परवाह किए बगैर हाइपरसोनिक मिसाइलो के निर्माण आविष्कार और उसके नवीनतम टेक्नोलॉजी पर प्रयोग और परीक्षण जारी रखे हुए हैं। सन 2021 वर्ष में मुख्यतः हाइपरसोनिक मिसाइलों के परीक्षण पर भारतीय डीआरडीओ ने ज्यादा जोर दिया था। वैसे तो मिसाइलों का परीक्षण मुख्यतः ओडिशा के तटवर्ती जिला बालेश्वर से किया जाता है। यहां पर बालेश्वर के चांदीपुर नामक स्थान पर स्थित है आइटीआर यानी कि अंतरिम परीक्षण परिषद का कार्यालय है। यहां पर एल सी 1 एल सी 2 और एल सी 3 नामक लंचिंग कंप्लेक्स है जहां से मिसाइलों का परीक्षण किया जाता है।

वहीं दूसरी ओर ओडिशा के तटवर्ती जिला में ही मौजूद है अब्दुल कलाम द्वीप जहां पर एल सी 4 यानी कि लंचिंग कंप्लेक्स 4 से मुख्यतः भारी-भरकम और अत्याधुनिक मिसाइलों का परीक्षण किया जाता है। डीआरडीओ यानी की रक्षा अनुसंधान और विकास संगठन भारत सरकार के रक्षा मंत्रालय का आर एंड डी विंग है। अत्याधुनिक रक्षा प्रौद्योगिकियों और महत्वपूर्ण रक्षा प्रौद्योगिकियों और प्रणालियों में आत्मनिर्भरता हासिल करने के लिए भारत को सशक्त बनाने में लगा है। आज भारत का डीआरडीओ जल स्थल और वायु तीनों सेनाओं के लिए अत्याधुनिक मिसाइलें तैयार करने के साथ-साथ परीक्षण करने की कोशिश में जी जान से लगा है।

हमारे पड़ोसी देश मुख्यतः चीन और पाकिस्तान समय-समय पर भारतीय मिसाइलों को लेकर विश्व स्तर पर इसकी चर्चा करते रहे हैं लेकिन यह दोनों देश अब भली-भांति समझ गए हैं कि भारत का



कोरोना महामारी से बिना डरे डीआरडीओ ने इस कठिन समय में भी भारत का ब्रह्मास्त्र कहे जाने वाला अग्नि 5 मिसाइल से लेकर बैलेस्टिक और क्रूज़ सीरीज की कई हल्के और भारी-भरकम मिसाइलों का सफलतापूर्वक परीक्षण किया।

डीआरडीओ मुख्यतः मिसाइल के क्षेत्र में मानो मील का पत्थर बन चुका है। किसी भी समय किसी भी मौके पर भारतीय मिसाइलें किसी भी परिस्थिति का सामना करने के लिए सक्षम हैं। यदि आज यह कहा जाए की कोरोना जैसी महामारी में भी नहीं रुकी मिसाइलों के परीक्षण की सांसे तो शायद यह असंभव नहीं होगा।

<https://www.jagran.com/odisha/bhubaneswar-drdo-conducted-tests-of-many-missiles-even-in-difficult-times-of-corona-epidemic-22377734.html>

DRDO on Twitter





Press Information Bureau
Government of India
Ministry of Defence

Thu, 13 Jan 2022 6:00PM

Joint press release of the 14th round of India-China Corps Commander level meeting

The 14th round India-China Corps Commander Level Meeting was held at Chushul-Moldo border meeting point on the Chinese side on 12th January 2022. Representatives from the defense and foreign affairs establishments of the two sides were present at the meeting.

The two sides had a frank and in-depth exchange of views for the resolution of the relevant issues along the LAC in the Western Sector. They agreed that both sides should follow the guidance provided by the State Leaders and work for the resolution of the remaining issues at the earliest. It was noted that this would help in restoration of peace and tranquility along the LAC in the Western Sector and enable progress in bilateral relations.

The two sides also agreed to consolidate on the previous outcomes and take effective efforts to maintain the security and stability on the ground in the Western Sector including during winter. The two sides agreed to stay in close contact and maintain dialogue via military and diplomatic channels and work out a mutually acceptable resolution of the remaining issues at the earliest. In this context it was also agreed that the next round of the Commanders' talks should be held at the earliest.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1789701>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Thu, 13 Jan 2022 6:00PM

भारत-चीन कोर कमांडर स्तर की 14वें दौर की बैठक की संयुक्त प्रेस विज्ञप्ति

भारत-चीन कोर कमांडर स्तर की 14वें दौर की बैठक 12 जनवरी 2022 को चीनी पक्ष की तरफ चुशुल-मोल्दो सीमा बैठक स्थल पर आयोजित की गई थी। बैठक में दोनों देशों के रक्षा और विदेशी मामलों के संस्थानों के प्रतिनिधियों ने हिस्सा लिया।

पश्चिमी हिस्से में एलएसी के साथ संबंधित मुद्दों के समाधान के लिए दोनों पक्षों के बीच स्पष्टता से और गहराई से विचारों का आदान-प्रदान हुआ। वे इस बात पर सहमत हुए कि दोनों पक्षों को देश के नेताओं के मार्गदर्शन में निर्देशों का पालन करना चाहिए तथा शेष मुद्दों के समाधान के लिए जल्द से

जल्द कार्य करना चाहिए। यह महसूस किया गया कि इससे पश्चिमी क्षेत्र में एलएसी के साथ अमन और शांति बहाल करने में मदद मिलेगी तथा द्विपक्षीय संबंधों में प्रगति को सक्षम बनाया जा सकेगा।

दोनों पक्षों ने वार्ता के पिछले परिणामों को समेकित करने और सर्दियों के समय सहित पश्चिमी इलाके में सुरक्षा एवं स्थिरता बनाए रखने के लिए प्रभावी प्रयास करने पर भी सहमति व्यक्त की। दोनों पक्ष निकट संपर्क में रहने और सैन्य व राजनयिक चैनलों के माध्यम से संवाद बनाए रखने तथा जल्द से जल्द शेष मुद्दों के पारस्परिक रूप से स्वीकार्य समाधान पर कार्य करने पर सहमत हुए। इस संदर्भ में यह भी सहमति बनी कि कमांडरों की वार्ता का अगला दौर जल्द से जल्द आयोजित किया जाए।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1789734>

THE TIMES OF INDIA

Fri, 14 Jan 2022

India could evade US curbs on S-400 deal, signals Biden aide

By Chidanand Rajghatta

Washington: More signs that the Biden administration will waive sanctions against India for buying Russian S-400 air defense system emerged on Wednesday with a key official saying Washington will have to weigh geo-strategic considerations involving China against a domestic law that calls for punitive action.

“The administration has made clear that it is discouraging India from proceeding with the acquisitions of Russian equipment, and there are important geostrategic considerations, particularly with (unintelligible) relationship to China. So, I think we have to look at what the balance is,” James O’Brien, President Biden’s nominee for the US State Department’s coordinator for sanctions policy said at his confirmation hearing, hewing to the broad sentiment in the administration and in Congress to give New Delhi a pass.

Indications that India could get past sanctions for the systems which Moscow has already begun supplying came also from remarks from lawmakers even as they noted that New Delhi is in process of acquiring new frigate ships from Russia.

“India is a vital ally in our competition against China, and thus, I believe we should resist taking any actions that might drive them away from us and the Quad. I am therefore strongly supportive of waiving CAATSA sanctions against India, given our shared foreign policy interests,” Indiana senator Todd Young said. Despite the growing sentiment against Russia on account of its alleged interference in US elections and its aggressive posture in its sphere of influence, the Biden administration and lawmakers appear intent on giving New Delhi enough wiggle room for now in return for an assurance that India will wean itself off Russian military supplies.

“As most here know, the Indians have a lot of legacy systems from previous decades, and they are interoperable with the Russians’ systems. And the Indians seek to defend their land border from Chinese incursions and defend the Indian Ocean from an increasingly adventurous and lawless blue ocean navy in the People’s Liberation Army,” Young noted in his support for a waiver under US domestic law known as Countering America’s Adversaries Through Sanctions Act (CAATSA).



India signed a \$5-billion deal with Russia to buy five units of the S-400 air defence missile systems, despite a warning from the then Trump administration that going ahead with the contract may invite US sanctions. Delivery of the systems to India began late last year

India signed a USD 5 billion deal with Russia to buy five units of the S-400 air defence missile systems, despite a warning from the then Trump administration that going ahead with the contract may invite US sanctions. Delivery of the systems began late last year.

The US administration has also struggled with giving India a pass while CAATSA is being invoked against Turkey, a NATO ally whose ties with Washington has gone south lately. Asked about this by Young, O'Brien said it is difficult to compare the two situations, describing India as "a partner of growing importance."

"India's got some decisions in front of it, so it would be premature to say more. But this is something I look forward to working with you and other interested members," he added.

<https://timesofindia.indiatimes.com/india/india-could-evade-us-curbs-on-s-400-deal-signals-biden-aide/articleshow/88886950.cms>

NAVAL TECHNOLOGY

Fri, 14 Jan 2022

Ultra and Mahindra partner on IADS programme for selected Indian ships

IADS provides a multi-sensor ASW capability using an in-line active and passive towed LFVDS.

Aerospace and defence engineering company Ultra Electronics has secured an integrated anti-submarine warfare defence suite (IADS) contract with the Indian Navy.

Awarded in collaboration with Mahindra Defence Systems, the contract will see the delivery of the IADS for the navy's selected frontline ships.

This deal is worth nearly £60m, Ultra said.

Ultra chief executive Simon Pryce said: "IADS represents a major enhancement in the Indian Navy's anti-submarine warfare capability and ability to deliver maritime mission effectiveness and protection to India's surface fleet.

"This is another significant and strategic order for Ultra and our Sonar Systems business unit. We are very proud of and committed to this programme, and to our long-term partnership with Mahindra Defence to deliver outstanding solutions to the Indian Navy."

IADS is designed to detect and protect ships from underwater threats.

It provides multi-sensor anti-submarine warfare (ASW) capability to detect and neutralise torpedo threats.

The equipment uses an in-line active and passive-towed Low-Frequency Variable Depth Sonar (LFVDS) and Torpedo Defence.

Ultra also noted that the deliveries are expected to start in 2024 and will run until 2030.

Mahindra Defence and Mahindra Aerospace chairman SP Shukla said: "IADS is the first major contract from the Indian Navy to an Indian private sector company for underwater detection and protection from threats.

"Mahindra is looking forward to delivering IADS and further building partnerships with Ultra in other programmes.

"This contract once again epitomises the success of the 'Make in India' initiative of the Indian Government."

In 2015, Mahindra Defence Naval Systems partnered with Ultra Electronics UK for the development of the Indian Navy's underwater warfare equipment.



Ultra will produce selected frontline warships for the Indian Navy (pictured INS Kolkata destroyer). Credit: U.S. Navy photo by Mass Communication Specialist Seaman Drace Wilson / commons.wikimedia.org.

This collaboration is for the delivery of new-generation advanced systems, including the new torpedo defence system (NTDS), IADS, and mine countermeasure (MCM) equipment.

<https://www.naval-technology.com/news/ultra-mahindra-partner-iads-programme/>



Fri, 14 Jan 2022

Exclusive: In latest threat to India, China builds illegal villages inside Bhutan

China has bypassed Indian positions to resume road construction activity from another axis, just nine kilometres from the Doklam face-off site.

By Vishnu Som

High-resolution satellite imagery sourced by NDTV confirms that China may be constructing at least two large, interconnected villages well within the territory of Bhutan.

These lie less than 30 km from the Doklam plateau where India and China had a tense stand-off in 2017 when Indian soldiers physically blocked Chinese road construction activity.

Since then, China has bypassed Indian positions to resume road construction activity from another axis, just nine kilometres from the Doklam face-off site. It has also constructed at least one full-fledged village, first identified by NDTV, with satellite images in November 2020.

According to Damien Symon, a leading GEOINT researcher at Intel Lab, who first identified the new sites in November last year, this is "irrefutable evidence of ongoing construction and development activity in an area disputed by China and Bhutan." The images show "multiple 'chalet-like' structures [which] are visible, with more under construction."

It is also clear that there is more construction underway. "In addition, heavy machinery and earth moving equipment is observed preparing similar pockets of land for future use." This is connected with a well-developed road network that connects the settlements. It remains unclear, at this stage, where these settlements are meant to station military forces or are, essentially, a territorial grab of the land of a nation which is essentially defence-less against the might of China's armed forces.

Bhutan and China have been in border talks for over four decades and while the outcome of these has never been revealed, there has never been any international declaration by Thimphu handing over an inch of its territory to China.

Bhutan has, historically, always relied on India, not just as a net-security provider but as an ally with a say in its foreign policy. While Bhutan's foreign policy decisions are now seen to be entirely independent, India and Bhutan remain extremely close allies, with Thimphu being well aware of New Delhi's concerns on Chinese expansionism.

Geo-strategist and author Brahma Chellaney said, "China's ramping up of construction of militarised border villages, including inside Bhutanese territory, holds two-fold implications for Indian security. Firstly, China's construction is opening a potential military axis against India's so-called chicken-neck from a different direction than the one Indian forces blocked during the 2017 Doklam standoff. Secondly, India is Bhutan's de facto security guarantor, and Chinese construction activity violating Bhutanese territorial sovereignty could be aimed at undermining the Bhutan-India relationship and compelling Thimphu to accede to Chinese demands."

China's efforts at making inroads into countries it has border disputes with has been described as "salami-slicing" by India's late Chief of Defence Staff General Bipin Rawat and has had a profound impact on the integrity of India's land frontiers.

India and China have been locked in a face-off in Eastern Ladakh for two years while China has stepped up its illegal construction activity in Arunachal Pradesh by building enclaves in areas not physically patrolled by the Indian Army.

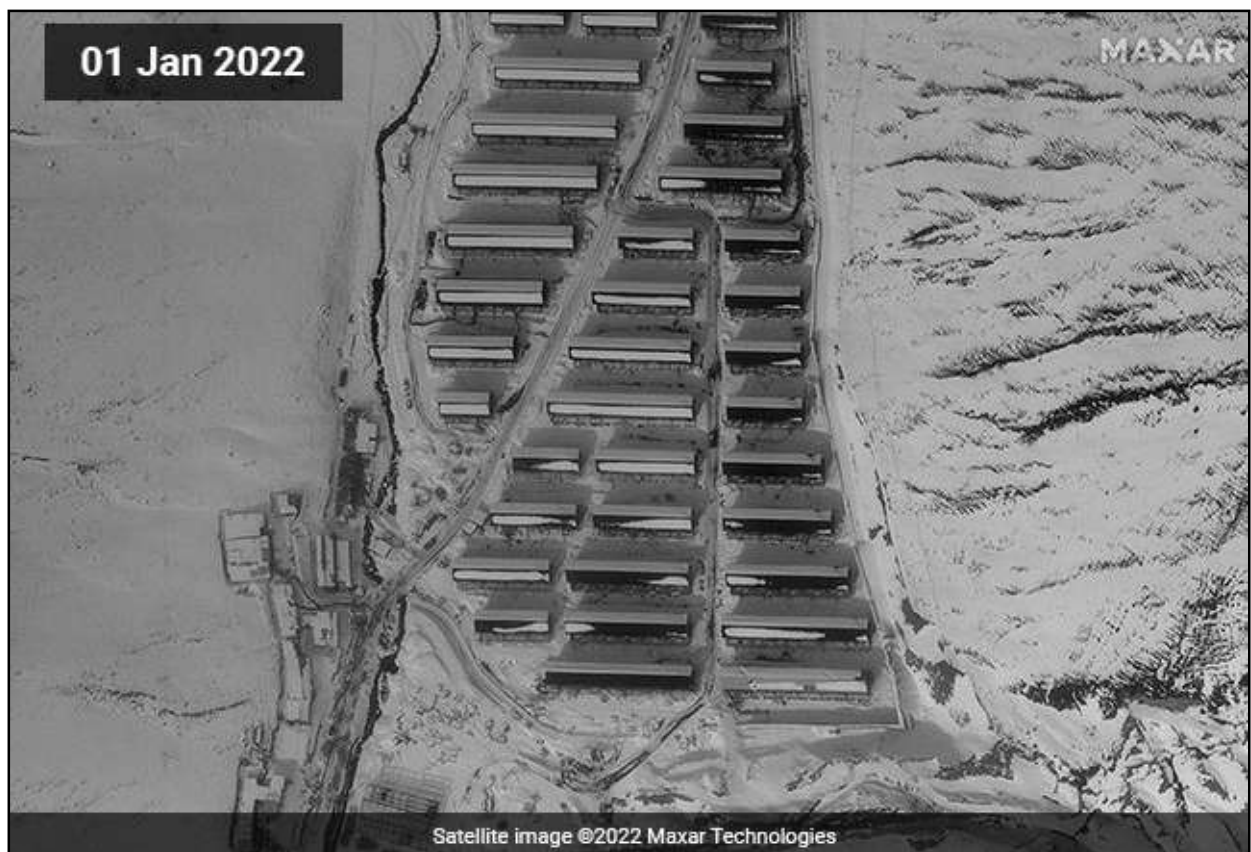
Responding to a query from NDTV yesterday on China's physical consolidation of the areas in Arunachal that it holds, the Army Chief General NN Naravane said differences between India and China exist because there are different perceptions of the Line of Actual Control which remains undemarcated. General Naravane did, however, make it clear that China will not be permitted to make any further inroads into Indian territory in Arunachal Pradesh. "As far as we are concerned, we are very well poised all along our borders and there is no question that any status quo as it exists today will be altered by force."



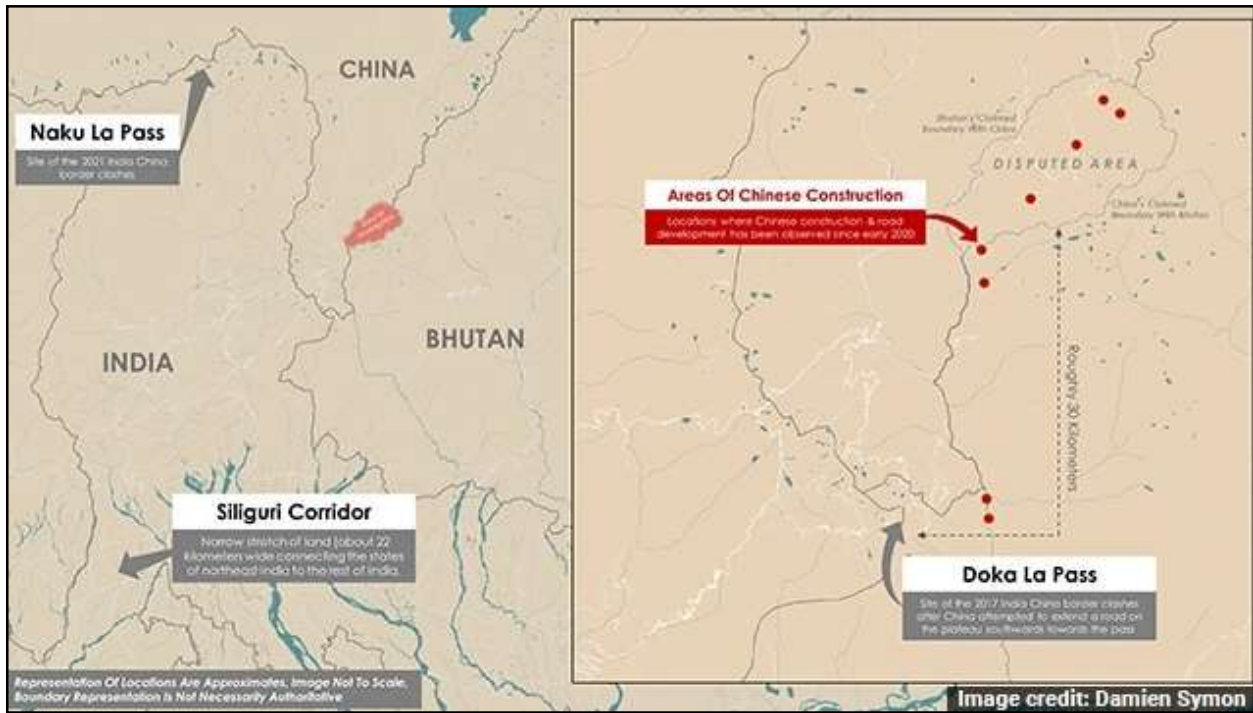
Images show two interconnected Chinese enclaves, 30 km from Doklam Plateau. High res: [here](#)



High-Res Images: New Chinese Enclaves In Bhutan Show 166 Buildings, Roads



January 1 image of one of the Chinese enclaves shows over 34 buildings in one of the enclaves illegally constructed within Bhutanese territory. [High res image here.](#)



Areas of Chinese construction shown in this report lie approx 30 km from the Doklam plateau where Indian and Chinese soldiers faced off in 2017. High res image here.



Illegally constructed Chinese enclaves within Bhutan likely to be used for both military and civilian purposes. High res image here.

18 Nov 2021

MAXAR



Exclusive: Satellite Images Show Villages Set Up By China Near Doklam

<https://www.ndtv.com/india-news/exclusive-high-res-images-new-chinese-enclaves-in-bhutan-show-166-buildings-roads-2706044>

Science & Technology News



Fri, 14 Jan 2022

Determining the Hamiltonian of quantum systems with far fewer measurements

The number of measurements needed to characterize a system of quantum particles is far fewer than previously thought, a RIKEN physicist and three collaborators have shown. As well as cutting the workload of experimentalists, this finding has important repercussions for verifying emerging quantum technologies such as quantum computing.

All the objects surrounding us are collections of quantum particles held together by electromagnetic forces. These forces can be expressed by remarkably simple equations. Complexity arises because interactions among particles yield non-trivial quantum phenomena that cannot be expressed in terms of one-particle behavior.

"The world we live in is governed by the Schrodinger equation," explains Tomotaka Kuwahara of the RIKEN Center for Advanced Intelligence Project. "In principle, we can clarify all

phenomena in nature by solving this equation. But to obtain the Schrodinger equation, you need to know the Hamiltonian (that is, the energy matrix), which depends on the details of the system."

The Hamiltonian can be determined by performing repeated measurements on a quantum system. But, with existing algorithms, the number of measurements increases exponentially with the number of particles making up the system, which makes for a prohibitively high number of experiments.

Now, Kuwahara and three collaborators at IBM, UC Berkley and MIT in the United States have developed a machine-learning algorithm for which the number of required measurements increases as the cube of the number of particles. Their setup considers the experimentally relevant situation of how many copies of the Gibbs state of a target Hamiltonian are needed to determine the Hamiltonian. For a system of 15 particles, that's roughly 3,000 measurements instead of about 30,000, while for a 100-particle system, it's 1,000,000 measurements instead of a whopping 10^{29} .

Surprisingly, the result applies even to low-temperature systems, whose thermal equilibrium states usually have highly complicated structures.

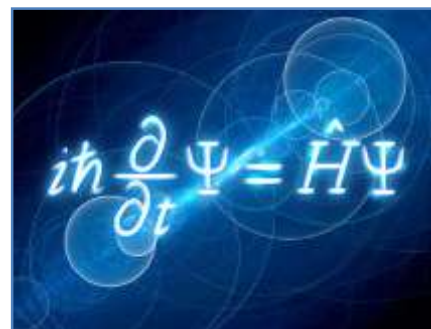
This advance has important ramifications for quantum computers. "In quantum computing, we often need to identify the system Hamiltonian for verification; such verification is a critical problem for the reliable implementation of quantum algorithms," says Kuwahara. "Our result can be used to verify some important quantum algorithms."

The researchers also anticipate that their algorithm could be used to investigate the properties of quantum materials by performing quantum measurements. "One application of our method is to use it to elucidate the properties of exotic quantum systems that are realized in complex setups such as ultracold-atom or trapped-ion experiments," says Kuwahara.

The team now intends to extend their work in two directions. "Using our current techniques, we may be able to clarify the sample complexity of other learning problems," says Kuwahara. "We also want to improve our algorithm so that it's not only sample efficient but also time efficient."

More information: Anurag Anshu et al, Sample-efficient learning of interacting quantum systems, *Nature Physics* (2021). DOI: [10.1038/s41567-021-01232-0](https://doi.org/10.1038/s41567-021-01232-0)

Journal information: *Nature Physics*
<https://phys.org/news/2022-01-hamiltonian-quantum.html>



At the heart of Schrodinger's equation lies the Hamiltonian (H). RIKEN researchers have shown that the number of measurements needed to determine the Hamiltonian of a quantum system increases as the cube of the number of particles in the system. Credit: Science Photo Library

