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# समाचार पत्रों से चयित अंश Newspapers Clippings

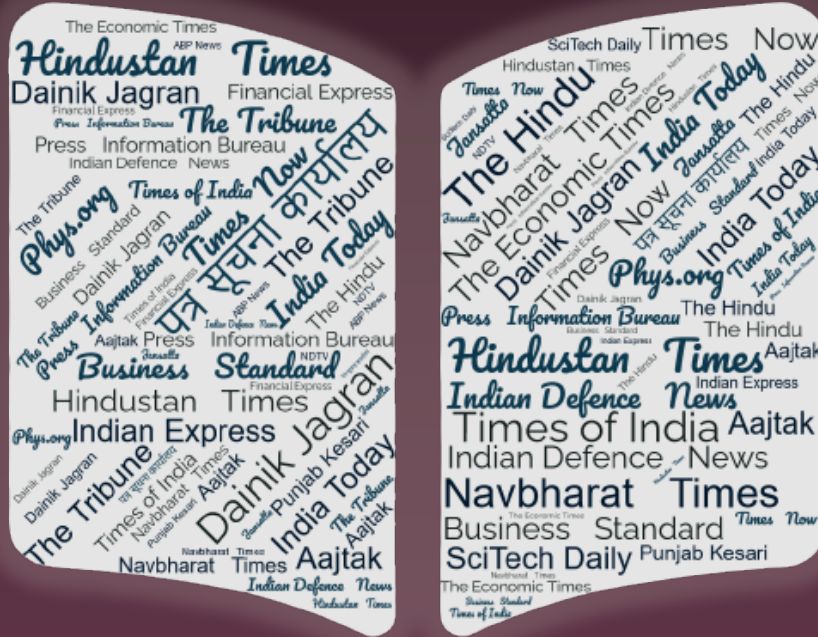
A Daily service to keep DRDO Fraternity abreast with DRDO  
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DRDO News

DRDO Technology News



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

**Ministry of Defence**

*Thu, 20 Oct 2022 1:21 PM*

**India Must Set New Goals According to Changing Times;  
R&D, With Active Private Sector Participation, Key To Deal  
With Future Challenges: Raksha Mantri at DRDO Seminar  
During DefExpo 2022**

**Shri Rajnath Singh Exhorts Private Sector to Take Advantage of  
Government's Policies & Contribute to Nation Building by  
modernising the Armed Forces**

India must set new goals according to the constantly-evolving global scenario and research & development, with active private sector participation, is the way to achieve the preparedness required to deal with future challenges. This was stated by Raksha Mantri Shri Rajnath Singh while addressing a seminar 'Aatmanirbharta in Defence R&D - Synergistic Approach' organised by Defence Research & Development Organisation (DRDO) as part of the 12<sup>th</sup> DefExpo in Gandhinagar, Gujarat on October 20, 2022. Shri Rajnath Singh listed out a number of policy reforms undertaken by the government to achieve 'Aatmanirbharta' in defence crucial for staying ready to deal with future security challenges. He made special mention of the announcement of fourth positive indigenisation list of 101 made by Prime Minister Shri Narendra Modi during the opening ceremony of DefExpo 2022, terming it as a matter of great pride that now over 400 defence items will be procured from domestic vendors.

The Raksha Mantri also spoke about the decision to dedicate one-fourth of the defence R&D budget to industry led R&D, saying that these are just some of the many steps which have laid the foundation of a strong self-reliant defence industry, sufficient to equip the Armed Forces with latest weapons/equipment. He exuded confidence that with the active participation of the private sector, the Armed Forces will be better prepared to deal with security challenges faced by the nation. "India has embarked on a journey of self-reliance of R&D in defence. Private sector will play a crucial role in taking us to the destination. Both public and the private sectors are the wheels, with which the R&D vehicle will move towards complete self-reliance. With collaborative efforts of the Government and the industry, we will realise the Prime Minister's vision of 'Make in India, Make for the World'," Shri Rajnath Singh said.

The Raksha Mantri also highlighted the crucial role played by DRDO in synergising the efforts of the industry, academia and Defence R&D towards fuelling India's mission of 'Aatmanirbharta'. He lauded DRDO for contributing towards enhancing the capability of the Armed Forces by developing various futuristic and first-of-its-kind innovations and technologies. He added that the organisation is no longer a sole service provider for defence R&D, but has also become a facilitator for in-house R&D and the private sector.



On the occasion, Shri Rajnath Singh felicitated the 'Dare to Dream 3' winners and launched the 'Dare to Dream 4' contest to encourage innovation through the Indian scientific community. He congratulated the winners of Dare-to-Dream 3 and said that the contest promotes new ideas and innovative thinking in individuals and start-ups. The Raksha Mantri also presided over the signing of MoUs with academic institutions and Naval Innovation and Indigenisation Organisation (NIO), Indian Navy for the formation of DRDO-Industry-Academia - Centres of Excellence (DIA-CoEs). The academic institutions included IIT Roorkee, IIT Jodhpur, IIT Hyderabad, IIT Kharagpur, IIT Kanpur, IIT BHU and Bharatiya University. These centres act as research nodes for the country in identified subjects which are building blocks for futuristic technologies. The MoUs with academic institutions will initiate the work in the focussed areas for advanced research in defence.

Long term and short-term research areas will be balanced to address the current needs and lay the foundations for futuristic technologies. In addition, Rotary Wing Research & Design Centre division of Hindustan Aeronautics Limited (HAL) and M/s Accord Systems and Software were awarded the design organisational approval certificates. Guidelines on the Human Reliability Factors and Human Reliability Assessment was released by Raksha Rajya Mantri Shri Ajay Bhatt for the benefit of all the stakeholders of the ecosystem. Two monographs authored by the former scientists of DRDO were also released by the Raksha Rajya Mantri. Design Organisation Approval Scheme certificates were also handed over to the industries on the occasion.

A book titled 'Compilation of 8 years major achievements of DRDO, Ministry of Defence (2014-2022)' was also released by Shri Rajnath Singh. The book contains various achievements of DRDO giving brief descriptions of major launches, flight trials, ToTs, DRDO-industry-academia partnership, etc. The second session was chaired by Secretary DDR&D Dr Samir V Kamat wherein presentations were made by all stakeholders of the defence R&D. Scientific Advisor to Raksha Mantri Dr G Satheesh Reddy chaired the panel discussions. The seminar was



also attended by senior distinguished service officers, officials from Ministry of defence, IIT Directors, industry representatives, academia, DRDO scientists and others.

<https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1869471>



गुरुवार, 20 अक्टूबर 2022

## रक्षा मंत्री ने कहा, डीआरडीओ को और अधिक आत्मनिर्भर बनाना जरूरी

गांधीनगर. रक्षा मंत्री राजनाथ सिंह ने कहा कि रक्षा एवं अनुसंधान विकास संगठन (डीआरडीओ) को ज्यादा से ज्यादा आत्मनिर्भर बनाना जरूरी है। इसके लिए केन्द्र सरकार हर तरीके से सहयोग करने को तत्पर है। गांधीनगर के महात्मा मंदिर में डिफेंस एक्सपो-2022 में आयोजित सेमिनार में सम्बोधित करते हुए रक्षामंत्री डीआरडीओ टीम की हौसला अफजाई की। उन्होंने कहा कि नए लक्ष्यांक एवं उपलब्धि हासिल करने के लिए शोध और नवोन्मेषी की आवश्यकता है। इक्षसह ने कहा कि डीआरडीओ सिर्फ डिजाइन ही नहीं बल्कि रक्षा क्षेत्र में काम करने वाली भारतीय कम्पनियों के लिए लैब का कार्य भी करता है। आजादी के बाद पहली बार रक्षा उत्पादन क्षेत्र में सरकार ने जननिजी भागीदारी और निजी कम्पनियों के संयुक्त प्रयासों से रक्षा क्षेत्र में नए आयाम हासिल किए हैं।

सभी भारतीय सुरक्षा बल आत्मनिर्भर बनें रक्षा राज्यमंत्री अजय भट्ट ने कहा कि सिर्फ व्यक्ति से नहीं बल्कि परिवार और सभी भारतीय सुरक्षा बलों को आत्मनिर्भर बनना चाहिए। एक विश्वस्तरीय संस्था की रिपोर्ट के मुताबिक रक्षा क्षेत्र के निर्यात में भारत ने दुनिया के शीर्ष देशों में अपनी जगह बना ली है। उन्होंने भारतीय सीमा पर गलवान घाटी का उल्लेख करते हुए कहा कि यह वर्ष 1962 का नहीं बल्कि वर्ष 2021 का भारत है। भारत अब रक्षा क्षेत्र में आयातक नहीं बल्कि निर्यातक की भूमिका निभा रहा है। भट्ट ने कहा कि नए भारत में अब तक 13 हजार करोड़ के रक्षा उपकरणों का निर्यात किया है, जिसमें डीआरडी की अहम भूमिका रही है। ब्रह्मोस, पिनाक, अग्नि, पृथ्वी जैसी स्वदेशी मिसाइल तैयार कर दुनिया के लिए पाथेय की भूमिका निभाई है, जिसमें डीआरडीओ समेत विभिन्न संस्थाओं की मेहनत रंग लाई है। इस मौके पर व्यक्तिगत श्रेणी में इनोवेशन और स्टार्टअप क्षेत्र में विशेष योगदान के लिए प्रथम तीन वैज्ञानिकों को अवार्ड और दस लाख रुपए तक पुरस्कार से सम्मानित किया गया। डीआरडीओ ने भारत की सात आईआईटी के साथ एमओयू किए हैं जिसमें आईआईटी-कानपुर, रुडकी, जोधपुर, खडगपुर, हैदराबाद जैसी संस्थाएं शामिल हैं। इस अवसर पर डीआरडीओ के अध्यक्ष डॉ. समीर कामत, स्वागत करते डीआरडीओ की भूमिका, उपलब्धियों और सेमिनार पर प्रकाश डाला। सेमिनार में

भारतीय नौसेना अध्यक्ष एडमिरल आर. हरिकुमार, रक्षा सलाहकार डॉ. जी. सतीश रेड्डी समेत रक्षा विभाग के वरिष्ठ अधिकारी मौजूद रहे।

<https://www.patrika.com/ahmedabad-news/rajnath-singh-said-it-is-necessary-to-make-drdo-more-self-reliant-7831153/>



*Thu, 20 Oct 2022*

## **India Must Set New Goals as Per Constantly-Evolving Global Scenario: Defence Minister**

India must set new goals in accordance with the constantly-evolving global scenario and conduct reasearch and development with active private sector participation, said defence minister, Rajnath Singh on Thursday. Addressing a seminar 'Aatmanirbharta in Defence R&D – Synergistic Approach' organized by Defence Research and Development Organization (DRDO) as a part of the DefExpo, the minister said that the government has taken a number of policy reforms to achieve self-reliance in defence as it is crucial to stay ready to deal with future security challenges. "It is a matter of great pride that over 400 defence items will be procured from domestic vendors." Singh added that there are certain steps which lay the foundation of a strong self-reliant defence industry which is sufficient to equip the armed forces with latest weapons/equipment. "With active participation of the private sector, the armed forces will be better prepared to deal with security challenges faced by the country." "India has embarked on a journey of self-reliance of R&D in defence. Private sector will play a crucial role in taking us to the destination. Both public and the private sectors are the wheels, with which the R&D vehicle will move towards complete self-reliance. With collaborative efforts of the Government and the industry, we will realize the Prime Minister's vision of 'Make in India, Make for the World'," he said.

The minister added that DRDO played a crucial role in synergizing the efforts of the industry, academia and defence R&D towards fueling India's mission of 'Aatmanirbharta'. "DRDO contributed towards enhancing the capability of the armed forces by developing various futuristic and first-of-its kind innovations and technologies. "The organization is no longer a sole service provider for defence R&D, but has also become a facilitator for in-house R&D and the private sector." Singh also felicitated the 'Dare to Dream 3' winners and launched the 'Dare to Dream 4' contest to encourage innovation through the Indian scientific community. He said that the contest promotes new ideas and innovative thinking in individuals and start-ups. "The minister also presided over the signing of MoUs with academic institutions and Naval Innovation and Indigenization Organization (NIIO), Indian Navy for the formation of DRDO-Industry-Academia - Centres of Excellence (DIA-CoEs). The academic institutions included IIT Roorkee, IIT Jodhpur, IIT Hyderabad, IIT Kharagpur, IIT Kanpur, IIT BHU and Bharatiya University. The MoUs with academic institutions will initiate the work in the focused areas for advanced research in defence," said the Ministry of Defence.

<https://www.livemint.com/news/india/india-must-set-new-goals-as-per-constantly-evolving-global-scenario-defence-minister-11666257346900.html>

## DRDO Displays Several Future Models of AEW&CS

### AEW&C / MMMA

Centre for Airborne Systems (CABS) has released an Expression of Interest to participate in Mission System of Airborne Surveillance System Program as a Development cum Production Partner (DccP) for AEWK MK-II project as per a DRDO release. The Cabinet Committee on Security (CCS) in Sept 2021 cleared a nearly Rs 11,000 crore project of the Defence Research and Development Organization (DRDO) to develop six new Airborne Early Warning and Control (AEW&C) aircraft for the Indian Air Force. This is in addition to the nearly \$3 billion deal for procuring 56 C-295MW multi-mission maritime transport aircraft for the IAF, which was also cleared by the Committee, to replace the ageing fleet of Avro 748 transport aircraft that first flew in 1961.

### ISTAR Development

India is “actively pursuing” the acquisition of ISTAR, a high-tech ground surveillance aircraft and battlefield support system, Indian Air Force Chief VR Chaudhari said on October 8. Air Chief Marshal Chaudhari’s comments indicate that the estimated \$3 Billion procurement of five ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) aircraft under the India-US Defence Technology and Trade Initiative (DTTI) framework is on track. The ISTAR is a key force multiplier.

<http://www.indiandefensenews.in/2022/10/drdo-displays-several-future-models-of.html?m=1>



गुरुवार, 20 अक्टूबर 2022

## तेजस 2.0: पहले से ज्यादा खतरनाक और ताकतवर, 10 बीवीआर मिसाइलें हो जाएंगी लैस

LAC-मार्क-2 को भारतीय सेना के लिए डीआरडीओ विकसित कर रहा है. इसके बाद इसे बनाने के काम हिंदुस्तान एयरोनॉटिक्स लिमिटेड करेगा. भारत में बनाया गया दुनिया का सबसे खतरनाक लड़ाकू विमान तेजस की पूरी दुनिया में धूम मची हुई है. अब इसी विमान को सबसे हल्का बनाए जाने का काम चल रहा है. यह मौजूदा एलसीए तेजस का नया अवतार होगा. लड़ाकू विमान तेजस को हाल के दिनों में कई देशों ने खरीदने में दिलचस्पी भी दिखाई थी. सबसे पहले तेजस एलएसी मार्क-1 बनाया गया था. इसके बाद



एलएसी मार्क 1ए आया और अब रक्षा अनुसंधान एवं विकास संगठन (DRDO) LAC-मार्क-2 को विकसित कर रहा है.

[https://webcache.googleusercontent.com/search?q=cache:7gFi\\_6eGDGIJ:https://www.abplive.com/news/tejas-2-0-dangerous-and-powerful-than-before-know-why-it-is-necessary-for-the-security-of-the-country-abpp-2242335&cd=1&hl=en&ct=clnk&gl=in&client=firefox-b-d](https://webcache.googleusercontent.com/search?q=cache:7gFi_6eGDGIJ:https://www.abplive.com/news/tejas-2-0-dangerous-and-powerful-than-before-know-why-it-is-necessary-for-the-security-of-the-country-abpp-2242335&cd=1&hl=en&ct=clnk&gl=in&client=firefox-b-d)



*Thu, 20 Oct 2022*

## **Atmanirbhar Bharat: LCA `Tejas' Mk2 variant expected to roll out next December**

The first flight of the prototype of Light Combat Aircraft Mk2 is set to be rolled out by the end of December next year. The Mk2 is going to replace the ageing fleets of MiG-29, Mirage-2000 and Jaguars in the Indian Air Force (IAF). The chief of the IAF earlier this month had explained in detail the phasing out of some fleets after the completion of their operational cycle by 2035. The research and development agency DRDO has set a target of the first flight to take off by December 2024 and by 2027 at least four prototypes are expected to be built, and before the decade is over the aircraft are expected to join the IAF service.

According to LCA Mk2 Project Director Dr V Madhusudana Rao, “There is a difference between the LCA Mk 2 and LCA Mk1 and Mk1 Alpha.” Explaining the differences between the different variants he says: The design of LCA Mk2 is a new design, and comes with enhanced capabilities. This will replace the MiG-29, Jaguar fighters as well as Mirage-2000s. The LCA Mk2 has 11 hard points while the Mk1 has 7 hard points and has the capability of carrying 6.5 tonnes of weapons. The Mk1 has a capacity of carrying 2,450 kg (litre) of internal fuel and Mk2 has a capacity to carry 4700kg of fuel externally. Therefore, this has helped in enhancing the range to 3000km.

### **What more is unique to Mk2?**

It has an onboard oxygen generating system (OBOGS) — a force multiplier. The Mk1 and Mk1A variants carry a bottle for the pilot and which has a maximum endurance of 1-2 hours. The Mk2 has a bottle which has endurance of almost eight hours, this means there is no duration limiting factor.

### **What is OBOG?**

This DRDOself-sustainable oxygen generation technology is being used for the pilots of the Indian Air Force (IAF) who are flying LCA `Tejas'. This is on board the fighter jet in the cockpits and compensates for the rapid decrease in oxygen levels at high altitude.

### **Weaponry systems**

There are different weapons integrated in the Mk2 variant – Russian weapons, French and western weapons and weapons that have been indigenously developed by DRDO. They have

been integrated in the flight design, the DRDO official stated. According to him the Mk2's wings have been widened and it can carry Scalp bomb which weighs around 1350kg. However, both Mk1 and Mk1A don't have the capability /capacity to carry Scalp bombs. This variant of LCA is maintenance friendly and has a range of 570km. And with its air to air configuration this variant can easily take off in half an hour and 45 minutes to take off in air to ground. It can do a quick turn around and has role change capability. The Mk2 variant will be powered by GE-F414-INS6 engine.

### **Future Warfare**

This variant has been developed keeping future wars in mind where Beyond Visual Range (BVR) missiles will play a big role. The new variant can carry 8-10 BVR missiles.

### **How much is the indigenous content?**

Right now the content is around 75 per cent and this is expected to go up to 82 percent. The engines which will power it will be made in India as there is a MoU in place with the US based GE Aviation. Under the MoU the US company will transfer 100 percent technology to make the engines locally. And this will help in taking up the indigenous content to over 90 percent. By December 2023 the first prototype will roll out and in case there are delays then March 2024 is the target and this will be followed by flight trials in December 2024.

### **Background**

Last year during the Aero-India, the government had inked an order of 83 LCA Mk1A for the IAF and these planes will be powered by GE's F404 jet engines. Later in the year both HAL and GE Aviation inked a US\$ 716 million deal for engines and support services to power the Mk-1A.

<https://www.financialexpress.com/defence/atmanirbhar-bharat-lca-tejas-mk2-variant-expected-to-roll-out-next-december/2722034/>



*Thu, 20 Oct 2022*

## **After key deals, Pinaka, BrahMos emerge leaders as India targets \$5 billion defence exports**

Indian companies *BrahMos Aerospace* and *Solar Group*, the manufacturers of indigenous *BrahMos* missile and *Pinaka* launchers said that they had begun receiving orders from other countries, which is being seen as a sign of the *Indian* defence industry's increasing strength as India targets \$5 billion in exports of its defence products. Atul D. *Rane*, the chairman of *BrahMos Aerospace*, stated that by 2025, *BrahMos Aerospace* should be able to meet that goal on its own, we hope. *BrahMos Aerospace* is hoping to receive more orders from the Philippines, and is also in contact with Vietnam, Malaysia, and numerous other nations, according to *Rane*. Early this year, the Philippines placed an order for *BrahMos* worth \$335 million in a glamorous, much-hyped deal.

A supersonic cruise missile, BrahMos was created by the Russian-Indian joint venture BrahMos Aerospace. The weapon is jointly produced by the Indian DRDO and the Russian NPO Mashinostroeniya. Meanwhile, Rane also said that BrahMos-NG missiles are anticipated to begin their qualification trials by early 2024. In the meantime, Armenia, which is at war with Azerbaijan, has ordered Pinaka missiles from the Solar Group, an indigenous manufacturer.

Nigeria and Indonesia have also shown interest in the Mukti barrel rocket launcher system, which was created domestically by the company in collaboration with the *Defence Research and Development Organization*, according to Solar Group, which was speaking at the DefExpo-2022. India had already had export success in Armenia when it gave the country's Swathi weapon-locating radar. A sizable order was also placed by the *Indian Army*, which plans to add more regiments of Pinaka rockets.

<https://www.timesnownews.com/mirror-now/in-focus/after-key-deals-pinaka-brahmos-emerge-leaders-as-india-targets-5-billion-defence-exports-article-94994578>

## हिन्दुस्तान

### बैटरी डेवलपमेंट में जीती डीआरडीओ की प्रतियोगिता

गुरुवार, 20 अक्टूबर 2022

आईआईटी रुड़की के टेक्नोलॉजी इन्क्यूबेशन एंड एंटरप्रेन्यूरशिप डेवलपमेंट सोसाइटी में इन्क्यूबेट किए गए स्टार्ट-अप इन्डाइजेनियस एनर्जी स्टोरेज टेक्नोलॉजीज प्राइवेट लिमिटेड को डीआरडीओ के डेयर टू ड्रीम 3.0 इनोवेशन कॉन्टेस्ट की स्टार्ट-अप कैटेगरी में विजेता घोषित किया गया। यह स्टार्ट-अप सोडियम-आयन बैटरी टेक्नोलॉजी डेवलपमेंट के लिए काम करता है। सोडियम-आयन बैटरियां, आत्मनिर्भर भारत दृष्टिकोण के अनुरूप हैं। इनोवेशन और उद्यमिता को बढ़ावा देने के लिए टाइडस की स्थापना की गई है। इस लक्ष्य को हासिल करने के लिए टाइडस आईआईटी रुड़की में एक बिजनेस इन्क्यूबेटर-टेक्नोलॉजी एण्ड डेवलपमेंट ऑफ एंटरप्रेन्यूरशिप सपोर्ट का संचालन और प्रबन्धन करता है।

इन्डाइजेनियस एनर्जी स्टोरेज टेक्नोलॉजीज प्रा. लिमिटेड की टीम आकाश सोनी, प्रो. योगेश शर्मा, डॉ. नागेश कुमार और डॉ. असित साहू को डीआरडीओ के डेयर टू ड्रीम 3.0 कॉन्टेस्ट में पहले पुरस्कार से सम्मानित किया गया। पुरस्कार के तहत 10 लाख की राशि रक्षा मंत्री राजनाथ सिंह ने दी। आईआईटी के कार्यवाह निदेशक प्रो. एमएल शर्मा ने कहा वर्तमान में आईआईटी के तहत टाइडस के 110 स्टार्ट-अप्स हैं। अकादमिक अनुसंधान के अलावा संस्थान इनोवेशन्स को बढ़ावा देकर उद्यमिता को प्रोत्साहित करता है।

<https://www.livehindustan.com/uttarakhand/roorki/story-drdo-39-s-competition-won-in-battery-development-7246196.html>



*Thu, 20 Oct 2022*

## **IIT Roorkee-Based Startup Wins the DRDO's 'Dare to Dream 3.0' Contest for Battery Development**

The Indigenous Energy Storage Technologies Pvt Ltd. (Indienergy), a start-up incubated at Technology Incubation and Entrepreneurship Development Society (TIEDS), Indian Institute of Technology Roorkee (IIT Roorkee), has been declared the winner of the DRDO's "Dare to Dream 3.0" innovation contest in the Startup Category. This startup works for Sodium (Na)-ion Battery Technology development. The Na-ion batteries are cost-effective and in line with AatmNirbhar Bharat's objectives. It is noteworthy the startup develops all the necessary components locally to commercialize the battery technology.

TIEDS has been established to promote innovation and entrepreneurship in the region. To accomplish its goal, TIEDS runs and manages a Business Incubator called Technology Innovation & Development of Entrepreneurship Support (TIDES) Business Incubator hosted at IIT, Roorkee. AkashSoni, Prof. Yogesh Sharma, Dr. Nagesh Kumar, and Dr. AsitSahoo, as an Indigenous Energy Storage Technologies Pvt Ltd. team, bagged the first prize in the DRDO's "Dare to Dream 3.0" content. An Award of Rs 10 lakh is given by the Defence Minister, Sh, Rajnath Singh. Last year in the "Dare to Dream 2.0" Contest, Prof. SudiptaSarkar from IIT Roorkee was the winner of the innovation contest in the individual category. Also, Log 9 Materials SciPvt Ltd., the first startup incubated by TIEDS, IIT Roorkee, had won the second prize in the startup category the previous year.


The Dare to Dream contest was initiated in memory of the former President of India, Dr. APJ Abdul Kalam, to identify ideas and technologies having the potential for future adoption for Indian defence and aerospace needs. It aims to unearth disruptive ideas and concepts by the DRDO in the emerging technologies by individuals & startups for enhancing defence capabilities. Defence Minister, Rajnath Singh said, "Starting from the science of trial and error to mastering cultivation and agriculture, we have understood the science of civilization. But for further progress and achieving new goals, new methods must be employed. And this is what I call Research and Development towards a better future and an AatmNirbhar Bharat."

<https://www.news18.com/news/education-career/iit-roorkee-based-startup-wins-the-drdo-dare-to-dream-3-0-contest-for-battery-development-6208453.html>

# DRDO on Twitter






 **DRDO** ✓  
@DRDO\_India

#DRDOUpdates | Day 3 #DefExpo22, Hon'ble Raksha Mantri graced the DRDO Seminar on "Aatmanirbharta in Defence R&D – Synergistic Approach" with his presence. Hon'ble Raksha Rajya Mantri, Chairman DRDO, CNS & SA to RM were also present

@DefenceMinIndia  
@SpokespersonMoD



4:01 PM · Oct 20, 2022 · Twitter for iPhone

 **TDF\_DRDO**  
@DrdoTdf

Hon'ble Minister of Defence, Shri @Rajnathsingh launched Dare to Dream 4.0 Contest at @DefExpo\_India today. The winners of Dare to Dream 3.0 were also awarded by the Hon'ble Minister.



7:57 PM · Oct 20, 2022 · Twitter Web App



Ajay Bhatt @AjaybhattBJP4UK



#DefExpo2022 में आज @DRDO\_India द्वारा 'Atmanirbharta in Defence R&D - Synergistic Approach' विषय पर आयोजित संगोष्ठी में प्रतिभाग कर संबोधित किया।



PMO India and रक्षा मंत्री कार्यालय/ RMO India



ANI @ANI



Gandhinagar, Gujarat | DRDO (Defence Research and Development Organisation) chief Samir V Kamat, today visited BrahMos Aerospace and appreciated efforts made by the Indo-Russian Joint Venture company for achieving many successful milestones in exports and other fields.



6:17 PM · Oct 20, 2022 · Twitter Web App

# Outlook

*Thu, 20 Oct 2022*

## **PM Modi Launches ‘Mission DefSpace’ at DefExpo 2022**

Prime Minister (PM) Narendra Modi launched Mission DefSpace in Gandhinagar on Wednesday. The initiative is aimed at developing innovative solutions for the defence forces in the space sector. “Space technology is an example of what security will mean for any strong nation in the future. Various challenges in this area have been reviewed and identified by the three services. We have to work fast to solve them,” Modi said. Under Mission DefSpace, 75 challenges in the space sector have been identified for private firms to work on.

### **New Frontiers**

As national defence has always been a top priority of the government, the Indian military is expanding beyond land, water and sky towards deep-sea and space programs, Defence Minister Rajnath Singh said. Pointing to the increasing importance of space technology, PM Modi said it is shaping new definitions of India’s space diplomacy and that the country is currently sharing its space science with more than 60 developing nations.

“The South Asia satellite is an effective example of this. By next year, ten ASEAN countries will also get real-time access to India's satellite data. Even developed countries like Europe and America are using our satellite data,” he added.

<https://www.outlookindia.com/business/pm-modi-launches-mission-defspace-at-defexpo-2022--news-231400>



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**Ministry of Defence**

*Thu, 20 Oct 2022*

**Raksha Mantri Shri Rajnath Singh gives away RM Awards for Excellence in Defence & Aerospace Sector for 2021-22; Terms them as Hidden Gems & Catalysts to Achieve ‘Aatmanirbhar Bharat’ Vision at a Faster Pace**

**“Aerospace and defence sector with vast potential for growth is an industry of Rs 80,000 crore; Of which contribution of private sector is Rs 17,000 crore”**

**RM bats for protection of intellectual property rights for defence innovations; solicits suggestions from industry**

**Calls upon the industry to manufacture state-of-the-art cost-effective products to make a mark in international market**

Raksha Mantri Shri Rajnath Singh gave away Raksha Mantri’s Awards for Excellence in defence and aerospace sector for the year 2021-22 to Indian Defence Industries, including the private sector, at an event organised as part of 12th DefExpo in Gandhinagar, Gujarat on October 20, 2022. A total of 22 awards were given under various categories viz. Indigenisation/Import substitution, Innovation/ Technological Breakthrough and Exports. Of these 22 awards, 13 were bagged by private industries and the remaining by the DPSUs/PSUs. These awards were equitably given to enterprises of various sizes, i.e., large, medium, small and start-up enterprises in order to provide a level playing field.

In his address, the Raksha Mantri emphasised that the core objectives of these awards are to encourage and reward all-round excellence in various dimensions of organisational performance, facilitate widening and deepening of industrial base in Indian defence and aerospace sector by identifying ‘hidden gems’, especially from MSME/ start-Up segment and promoting them as role models for others. He appreciated the fact that the awards have been re-established from 2022, incorporating private industries. This will boost the ‘Aatmanirbhar Bharat Abhiyan’ of the government and encourage the development of these companies, he said.

The Raksha Mantri described the Indian defence ecosystem as beautiful and promising amalgamation of the Government and defence manufacturing industry. While appreciating the present joint efforts which has bolstered the defence sector, he called for continuous collaborative efforts for sustainable growth of this ecosystem. Shri Rajnath Singh highlighted that the aerospace and defence sector, at present, is an industry of about Rs 80,000 crore, in which the contribution of the private sector has increased to about Rs 17,000 crore. He voiced the vision of the Ministry of Defence (MoD) to showcase the capabilities of the Indian defence and aerospace sector to the world, which he said is possible if items, which are state-of-the-art and low cost, are manufactured. Top quality items reflect the quality of the producing country, he



said, urging the industry to manufacture state-of-the-art cost-effective products. “Excellence in products will be the foundation of our self-reliance,” he said.

The Raksha Mantri listed out a number of steps taken by the Government to achieve excellence in defence and aerospace sector, thereby realising Prime Minister Shri Narendra Modi’s vision of ‘Aatmanirbhar Bharat’. He made special mention about the Positive Indigenisation Lists which have been notified to achieve self-reliance in defence manufacturing. He added that a Defence Investor Cell has been created in the MoD to provide all necessary information and address queries related to investment opportunities, procedures and regulatory requirements. He also shed light on indigenisation portal ‘Srijan’, which is a one stop portal for information about the defence items required by the Services.

Shri Rajnath Singh stressed on the need to promote IPR in the defence sector, which were highlighted through these Excellence awards. “Mission Raksha Gyan Shakti was launched to promote the creation of intellectual property in the defence sector. An Intellectual Property Facilitation Cell has been set up to provide general advisory regarding IPR for patents, trademarks, designs and copyrights etc. Similar reformative steps are being taken to promote IPR in the defence sector,” he said, exuding confidence that with all these initiatives, Indian defence and aerospace industries will get more opportunities for expansion and recognition and their products are able to compete with other reputed companies, nationally and internationally.

The Raksha Mantri emphasised to reforms required for the growth of the industry is an ongoing process, for which continuous and laborious efforts of all stakeholders are needed. He called upon the Indian industry to come forward and provide constructive suggestions to achieve the ultimate goal of complete self-reliance. He assured them that the MoD is committed to fulfil the expectations of the industry. Raksha Rajya Mantri Shri Ajay Bhatt, Chief of Defence Staff General Anil Chauhan, Defence Secretary Dr Ajay Kumar, Chief of the Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar, Chief of the Army Staff General Manoj Pande and other senior civil and military officials of MoD were present on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869610>



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*Thu, 20 Oct 2022*

## **Raksha Mantri Emphasises Preparedness through ‘Aatmanirbharta’ to Respond to Geo-Political Challenges**

**Highlights need for balance between two wings of Aatmanirbhar defence – Armed Forces  
and Industry – for growth of Indian defence industry**

**Shri Rajnath Singh addresses industry stakeholders at HQ-IDS-FICCI seminar on  
‘Aatmanirbhar Bharat’; Calls for developing world’s best technologies**



Raksha Mantri Shri Rajnath Singh has said, the flight of an Aatmanirbhar Defence depends on the two wings of industry, manufacturers and supply on one hand and armed forces, users and demand on the other. He was speaking at a seminar organised by FICCI in coordination with Headquarters of Integrated Defence Staff on 'Aatmanirbhar Bharat & Make in India: Roadmap for the Armed Forces' as part of 12th DefExpo in Gandhinagar, Gujarat on October 20, 2022. Shri Rajnath Singh emphasised the need to balance these two wings of the Indian Defence sector to attain new heights. Addressing the gathering, Shri Rajnath Singh highlighted the need for indigenization of defence equipment and technology and uniqueness in planning to maintain a surprise element in our response to adversaries. He acknowledged that our preparedness in responding to challenges of the rapidly changing geo-political scenario, particularly neighbourhood threats, has grown in recent years and efforts are on to continue this progress.

The Raksha Mantri said acquisition of military equipment was delayed and their uniqueness was compromised, as also it was comparatively below the standards of others. In such a situation, it's imperative for India to indigenise. Raksha Mantri listed various steps taken to strengthen our defence industry through making capital and technology available, development of R&D ecosystem and a large market. He mentioned reservation of 68% of the capital acquisition budget for domestic industry for 2022-23, 25% of domestic capital procurement from private industry, MSMEs and start-ups, reservation of 25% of the Defence R&D budget to promote industry, start-ups and academia, Defence Innovation Start-Up Challenges and Technology Development Fund as steps that have been taken to encourage private industry and MSMEs.

Shri Rajnath Singh emphasised the importance of quality in defence products and technology, saying that any compromise in this respect hurts our national interest and pride. He exhorted all stakeholders to develop the best defence technologies in the world to forge an identity for our defence industry on the national and international stage. Raksha Mantri appealed to the armed forces for their continued support to the domestic industry and appreciated their full cooperation to Aatmanirbharta in defence sector.

Earlier, Chief of Defence Staff General Anil Chauhan addressed the seminar and expressed his firm belief that no country can aspire to grow stronger without achieving self-reliance in defence research and development and manufacturing. Chief of Defence Staff pointed out that recent developments have highlighted the fragile nature of regional and global nature, reinforcing the belief in Aatmanirbharta in Defence. He said that the emerging geo-political scenario has made the three services realise the importance of Aatmanirbharta, reflected in the positive indigenization lists. General Chauhan informed the attendees that contracts worth Rs. 62,000 crores have already been signed and orders worth about Rs. 7 lakh crores are under various stages of procurement with the Indian Defence industry. He recalled successes in this sphere such as commissioning of INS Vikrant, induction of the HAL developed Light Combat Helicopter Prachand into the Indian Air Force and growing reach of indigenously designed weapons systems. General Chauhan also noted that India's Aatmanirbharta model is not averse to collaboration between Indian Defence establishment, private enterprises and Foreign OEMs. The three service chiefs, domestic industry representatives and officials from the government of India attended the seminar.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869723>



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*Thu, 20 Oct 2022*

## **Raksha Mantri Invites Investors & Foreign Oems to be Part of Indian Defence Sector to Integrate Into Global Supply Chains**

**Indian defence industry capable of developing futuristic weapons & systems, says Shri Rajnath Singh at 'Invest for Defence' event during DefExpo 2022**

**Aim is to increase defence production to USD 22 billion by 2025: RM**

Raksha Mantri Shri Rajnath Singh invited investment from domestic industry and Foreign Original Equipment Manufacturers (OEMs) in the Indian defence sector and asked them to take advantage of the opportunity to integrate into the global supply chains, during the 'Invest for Defence' investor outreach event organised as part of 12th DefExpo in Gandhinagar, Gujarat on October 20, 2022. Referring to the enthusiastic participation of domestic industry and businesses, the Raksha Mantri said the trust of the industry stakeholders is encouraging and reflects their faith in the Indian defence sector. He said that this is a golden period for Indian Defence Industry, which will be a sunrise sector in the years to come. Sharing the government's future plans for the defence sector, he said that the target is to increase defence production from USD 12 billion to USD 22 billion by 2025. This provides unparalleled opportunities for growth to the industry in the coming years, he added.

Shri Rajnath Singh questioned the earlier view of a dichotomy between economic development and security, and asserted that they are complementary. He noted that this approach has changed in the past few years and now these two concepts are integrated, as they strengthen each other. "Today, the nation is integrating and moving forward with these two capabilities, which complement each other, and making unparalleled improvements in both," said Shri Rajnath Singh. He added that economic and strategic capabilities are essential for development of science and technology, health, agriculture, trade and commerce.

Highlighting the achievements of the domestic Defence industry, the Raksha Mantri said it has demonstrated capabilities by building Fighter Aircraft, Aircraft Carrier, Main Battle Tanks and Attack Helicopters and gained experience to further build on this ecosystem. "This experience will help in supporting and developing defence weapons/systems for future generations", he added. He termed DefExpo 2022 as an excellent platform for existing and prospective investors to become a part of the phenomenal growth of the Indian defence industry.

Shri Rajnath Singh observed that it is natural for investors to look for profit and offered a value proposition. He said the country has skilled human resources and a healthy population and the government has taken several steps to further enhance this aspect. He referred to the financial measures that have enabled banks to extend loans, boost capital availability and led to establishment of a venture capital funding culture.

In the field of technology, the Raksha Mantri added that the government has improved lab to industry linkage for organisations such as CSIR and DRDO and introduced initiatives such as Innovations for Defence Excellence (iDEX) and Technology Development Fund to provide financial support for upgradation and innovation in products, systems, processes for the Armed Forces. Foreign Direct Investment norms in the Defence sector have been liberalised to 74% through the automatic route, and 100% through government route and trading in stock markets has become more transparent, which has also benefited defence companies, he said.

Shri Rajnath Singh added that the government has dedicated one fourth of the Defence R&D budget to industry led R&D to encourage private players. He stated that providing markets to industry is part of the Government's commitment to build an 'Aatmanirbhar Bharat' "To increase the participation of domestic industry in the defence sector, the government has reserved 68% of the defence capital acquisition for domestic procurement for the year 2022-23, which is approximately Rs. 85,000 crores and 25% of this has been reserved for domestic private industry", he said. The Raksha Mantri stressed that all these measures have increased defence exports in the past few years. He reiterated the unlimited possibilities of growth for the Indian Defence Industry and invited businesses to invest in the sector. 'Invest for Defence', the first ever marquee event of Ministry of Defence, was targeted to promote investment in the defence sector in the country both by the Indian industry as well Foreign OEMs.

Earlier, a panel discussion was held with the Vice Chiefs of the three-armed forces, DG (Acquisition), and CEOs from Airbus, Lockheed Martin, SAAB, Adani Defence & Aerospace, Bharat Forge and L&T. The Indian Air Force informed that huge opportunities will be available to industry for indigenous networking infrastructure, critical to security and 62,000 lines are likely to be available for indigenization in next 10 years. The Army said that it is going through major upgradation resulting in a huge scale of opportunities. Two systems - Man-portable Anti-Tank Guided Missiles and Very Short-range Missile systems – are an urgent requirement along with consumables like small arms. Director General (Acquisition), MoD, informed that the procurement process is being overhauled and the Ministry of Defence is in the process of developing, in the next one year, a AoN bank of USD 50 billion.

During the discussion, Adani Defence & Aerospace projected huge investments to the tune of Rs. 5,000 Crores in priority areas of information processing, AI/ML, Unmanned systems etc. Additionally, the company said that it is investing in UP Defence Industrial Corridor to set up an Ammunition facility. It also shared a plan to set up the largest Maintenance and Repair Operations (MRO) facility to cater to both Defence & Civil areas. Further, Lockheed Martin shared its plans for establishing MRO and Multi Role Fighter Aircraft facilities in the country and integrating local manufacturers into the global supply chain. SAAB India also announced that it is planning to commence production of launchers in India by 2024.

iDEX also hosted a panel session on 'The India Opportunity - Aerospace and Defence' during the event. The panelists consisting of Leading Venture Capitalists, financial institutions and legal entities spoke about their outlook for the Indian Defence sector and re-affirmed their commitment to achieve Atmanirbhar Bharat in the aerospace and defence sector. On the sidelines of the event, a B2B session was held in coordination with IIFL Finance on the theme 'Opportunities from Large Platforms'. The session was attended by the CMDs of DPSUs and CEOs of large private companies, startups and MSMEs. An Investor Demo pitch was also organized in collaboration with SINE IIT Bombay, where iDEX Deeptech Startups showcased

their technologies to investors. After the session, the DIO received intent of investments from several investors. The participating investors included Ravinder Pal Singh - partner Kalaari Capital, Vishesh Rajaram - founder speciale invest, Satya Bansal - Founder Blue Ashva Capital, Arjun Sinha - partner AP & P, Vikram Jain, AVP - IDBI Capital and Dhruvashish Bhattacharya - Head MSME, Bank of Baroda.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869467>



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*Thu, 20 Oct 2022*

## **Biggest-Ever Defence Exhibition – DefExpo – 2022 Witnesses 451 MoUs, ToT Agreements & Product Launches during Bandhan Ceremony**

**Envisages investment worth Rs 1.5 lakh crore**

**Indian Air Force & HAL conclude contract for 70 HTT-40 indigenous trainer aircraft  
worth Rs 6,800 crore**

**Raksha Mantri terms DefExpo 2022 as the beginning of a new era of self-reliance; ‘New  
India’ fully ready to stand shoulder-to-shoulder with major world powers**

**“Government is committed towards the growth of public & private sector to fulfil the twin  
objectives of complete self-reliance & increased defence exports”**

**Aatmanirbharta does not mean establishing supremacy; It is to ensure that the nation  
remains protected from all threats: Shri Rajnath Singh**

Four hundred and fifty-one (451) Memoranda of Understanding, Transfer of Technology agreements and product launches took place during the Bandhan ceremony of 12th DefExpo in Gandhinagar, Gujarat on October 20, 2022. Of the 451, there were 345 MoUs, 42 Major Announcements, 46 Product Launches and 18 ToTs. The contribution of Gujarat was 28 MoUs and one Product Launch. It envisages investment worth Rs 1.5 lakh crore. Indian Air Force and Hindustan Aeronautics Limited concluded a contract for 70 HTT-40 indigenous trainer aircraft worth Rs 6,800 crore.

In his address at the ceremony, which culminated with three business days of DefExpo, the Raksha Mantri asserted that the 12th edition of the event has written a new chapter on the growth & prowess of the Indian defence sector. He termed it as the beginning of a new era of self-reliance, in which a strong and prosperous ‘New India’ is fully ready to stand shoulder-to-shoulder with major world powers. The grand success of the event is proof that India is well on course to become a global defence manufacturing hub in the times to come. Shri Rajnath Singh pointed out that India’s stature has grown on the world stage in the last few years due to the

visionary leadership and policies of Prime Minister Shri Narendra Modi, exuding confidence that the vision of 'Aatmanirbhar' in defence and increased exports will soon become a reality.

The Raksha Mantri thanked the Defence Ministers & senior officials from many countries as well as a large number of business leaders from across the globe for making the 12th DefExpo a grand and successful event. He said that all the delegates were witness to the zeal and enthusiasm of a 'New India' which is fast emerging as a hub of manufacturing in the defence and aerospace sector. The successful conduct of DefExpo 2022, despite the challenges posed by the COVID-19 pandemic, reflects the vibrant energy and indomitable spirit of a 'New India'. Shri Rajnath Singh emphasised that DefExpo 2022 served as a platform to enhance India's defence cooperation with different countries and discuss issues of mutual interest. He shed light on his fruitful discussions with Defence Ministers of various countries, who actively participated in DefExpo, as also the successful conduct of Indian Ocean Region plus (IOR+) conclave. He termed IOR as an area of strategic importance for India and reiterated the Prime Minister's vision of Security and Growth for All in the Region (SAGAR) to maintain peace, security and prosperity in IOR.

The Raksha Mantri asserted that the resounding success of DefExpo 2022 is evident from the participation of high-level delegations from many countries and a large number of exhibitors, besides companies and nations which joined virtually. Shri Rajnath Singh termed the large number of MoUs, Product Launches, Major Announcements, Transfer of Technology Agreements of DRDO with business entities as a testimony to the emerging robust defence ecosystem in the country and be a big step towards strengthening the defence industrial base and achieving the goal of 'Make in India, Made for World'.

Shri Rajnath Singh said, India is progressing rapidly on path to complete self-reliance, with many sectors becoming 'Aatmanirbhar' and global suppliers. He added that the government is committed towards the growth of the public and private sector to fulfil the twin objectives of promoting self-reliance and increased defence exports. He expressed confidence that the country will achieve the defence export target of Rs 35,000 crore by 2025. He hoped that the enthusiasm of DefExpo 2022 will be carried forward in new areas through more collaborations, which will help in advancing India as a leading defence manufacturer and exporter and realising the Government's vision of 2047.

The Raksha Mantri reiterated that the Government's efforts to strengthen the defence sector are not aimed at establishing the country's supremacy. "India has always considered the whole world as its family and has moved ahead with the spirit of welfare and world peace for all. We believe in safeguarding the individual as well as the collective interests of the world together. Our self-reliance efforts are to ensure that the nation and its people remain protected from future threats," he said. Gujarat Governor Shri Acharya Devvrat, Raksha Rajya Mantri Shri Ajay Bhatt, Chief of Defence Staff General Anil Chauhan, Chief of the Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar and Chief of the Army Staff General Manoj Pande, Defence Secretary Dr Ajay Kumar and OSD, Department of Defence Shri Giridhar Aramane were among those who attended the ceremony.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869734>



## DefenceExpo2022 राजनाथ ने कहा, अमरीकी कंपनियां भारत में प्रारंभ कर रही है निर्यात इकाई

रक्षा मंत्री राजनाथ सिंह ने कहा कि इज ऑफ डुइंग बिजनेस के तहत अमरीकी कंपनियां को तकनीक विकसित करने और उत्पादन इकाई स्थापित करने की प्रक्रिया को आसान बनाया गया है। रक्षा क्षेत्र में ग्लोबल सप्लाय चेन में अमरीका की मेगा कंपनियों के लिए भारत में लघु एवं मध्यम कम्पनियां महत्वपूर्ण भूमिका निभा रही हैं। 'मेक इन इंडिया' से 'मेक फॉर वल्ड' के नारे के साथ अमरीकी कंपनियां भारत में अपनी निर्यात इकाई प्रारंभ कर रही हैं। महात्मा मंदिर में डिफेन्स एक्सपो के तहत आयोजित सेमिनार में उन्होंने कहा कि केन्द्र सरकार ने पिछले आठ वर्षों में रक्षा क्षेत्र में प्रगतिशील सुधार किए हैं। इसके चलते भारत-अमरीका के बीच रक्षा क्षेत्र में रिश्ते और मजबूत बने हैं। यूएस-इंडिया बिजनेस काउंसिल के सकारात्मक प्रयासों से दोनों ही देशों के बीच भागीदारी और मजबूत बनी है। उन्होंने रक्षा क्षेत्र की कंपनियों से भारत में निवेश करने पर जोर दिया और हरसंभव सहायता का विश्वास दिलाया। इस सेमिनार में भारत-अमरीका के रक्षा विशेषज्ञ, रक्षा मंत्रालय तथा कंपनियों के अधिकारियों के बीच पैनाल चर्चा भी हुई।

<https://www.patrika.com/ahmedabad-news/rajnath-singh-said-it-is-necessary-to-make-drdo-more-self-reliant-7831153/ahmedabad-news/rajnath-singh-said-us-companies-are-starting-export-units-in-india-7831145/>



Fri, 21 Oct 2022

### Invest in Defence Industry, Assure Good Returns: Rajnath Singh at DefExpo

ASSURing “good returns”, Union Defence Minister Rajnath Singh Thursday invited investment from the domestic industry and foreign Original Equipment Manufacturers (OEMs) in the Indian defence sector and urged them to take advantage of the opportunity to integrate global supply chains. Speaking at the ‘Invest for Defence’ outreach event at the **DefExpo 2022** in Gandhinagar, Singh said the Indian defence industry will be “a sunrise sector in the years to come”. “By the year 2025, the government plans to increase defence production from USD 12 billion to USD 22 billion. The possibility of this figure exceeding the USD 22 billion

cannot be ruled out. You can just imagine the opportunities that will be available for the industry, with this kind of growth,” he said.

“Earlier, the doors of the Defence ministry used to remain closed. Defence ministers and officials in the Ministry used to hesitate (to agree) for a meeting. The concern was that someone might point an accusing finger. We are not worried about this. If the investors have a problem, the doors of my officials and mine are always open,” he said. “Usually, the strength of a country stands on two pillars. The first is the GDP, and the second is its defence capability or its ability to keep itself secure. These two factors decide the development of knowledge, science, agriculture, trade, etc. A prosperous country can bear the cost of security for a longer time. The more secure a country is, it can make better economic progress.”

“For a long time, there was a line of thought in the country that defence and development were opposite poles. It meant that if we concentrated on our social-economic development, then we would have to compromise on our defence capabilities; and if we increased our defence capabilities, then we had to compromise with socio-economic development. It is surprising that despite gaining Independence, we could not gain independence from this point of view,” he said, adding that a long time was spent in balancing economic growth and defence capabilities. “To increase the participation of domestic industry in the defence sector, the government has reserved 68% of the defence capital acquisition for domestic procurement for the year 2022-23, which is approximately Rs 85,000 crore and 25% of this has been reserved for the domestic private industry,” he said.

“We have been able to create such an environment for our investors. It will not only provide them good returns, but will also create an image for them in domestic and global markets,” Singh said. Later, while addressing a seminar organised by the US-India Business Council (UIBC) and Society of Indian Defence Manufacturers (SIDM), Singh invited US companies to set up manufacturing units in India and develop technology collaborations with Indian industries to create a global supply chain free from vulnerabilities and uncertainties.

<https://indianexpress.com/article/cities/gandhinagar/rajnath-singh-defence-expo-2022-investors-8220535/>



*Thu, 20 Oct 2022*

## **End of 3-day: DefExpo has Started Empowerment of Indian Defence Sector, Says Rajnath**

Curtains came down on the mega three-day event DefExpo 2022 on Thursday in Gujarat's Gandhinagar where 451 Memoranda of Understanding, product launches and technology transfers were concluded to provide further impetus to the aerospace and defence industry of the country. The valedictory function was graced by Governor of Gujarat AcharyaDevvrat and Defence Minister Rajnath Singh. In his valedictory speech, Rajnath Singh said that today DefExpo-2022 is concluding but with this new chapter of empowerment of the Indian Defence sector is starting. This is the start of self-reliance of the Indian defence sector and this will move forward with new energy and determination.

The success of this mega event has proved that India will be the hub of Global Defence Manufacturing, he said. The 12th edition of DefExpo was excellent and successful. Defence Ministers and senior diplomats from several countries participated in it. Business leaders who participated in this mega event have important contributions to the event. During the DefExpo, events like Start-up Manthan, Invest for Defence, India-Africa Defence Dialogue and Bandhan were successfully organized.

Indian Ocean region (IOR) is important for India in terms of strategic importance. To maintain peace, security and economic interest in the region, PM Narendra Modi has proposed the idea of Security and Growth for All in the Region (SAGAR). And in order to achieve the vision, IOR Conclave was also held where delegates assured complete cooperation, he said. "Bandhan' Ceremony has its own significance and I have been informed that during DefExpo large numbers of MoUs, Product launches, and business entities with DRDO under Transfer of Technology Agreements have been done. And it is an outcome of the country's emerging robust Defence Ecosystem," he said. PM Narendra Modi has appealed for 'Make in India' and 'Atmanirbhar Bharat'. India is turning self-reliant to boost the economy and aiming to be a global supplier, he said.

"The government has taken many steps to be self-reliant and increase Defence export and to achieve the targets we will keep promoting public and private partners. And it will help us to achieve the target of Rs 40,000 crore Defence Exports by 2024-25," he said. The success of this event belongs to the exhibitors who came to the event from far away and promote their business by displaying their products in Def Expo. This is a success of the Gujarat government which made this event to happen a huge success, he added.

<https://www.aninews.in/news/national/general-news/end-of-3-day-defexpo-has-started-empowerment-of-indian-defence-sector-says-rajnath20221020234429/>



*Thu, 20 Oct 2022*

## **DefExpo 2022: Defence Minister Rajnath Singh Terms Current Era as Golden Period for Indian Defence Sector**

Defence Minister Rajnath Singh has said that the current era is a golden period for the Indian defence sector. The Minister was speaking at Invest for Defence event held today at Mahatma Mandir Convention and Exhibition Centre, Gandhinagar as part of DefExpo 2022. The event witnessed participation from domestic and foreign institutional investors. Defence Minister said that the Indian industry has showcased its capabilities by manufacturing fighter aircraft, aircraft carriers, main battle tanks and attack helicopters.

He added that we have to create a healthy environment for our investors that will not only give them good returns but also give them recognition in domestic and global markets. Mr Singh said that we are making all efforts to protect our domestic industry from unfair foreign competition in the domestic market. Simultaneously, we are making efforts to get market access for domestic businesses in foreign countries so they can capture markets outside India. The event was

organised to promote investment in the defence sector in the country by both the Indian industry and foreign original equipment manufacturers. It highlighted the requirements of the armed forces and policy reforms undertaken by the government for ease of doing business in the defence sector.

<https://newsonair.com/2022/10/20/defexpo-2022-defence-minister-rajnath-singh-terms-current-era-as-golden-period-for-indian-defence-sector/>



*Thu, 20 Oct 2022*

## **Indian Companies Showcase Their Manufacturing Capabilities at DefExpo 2022**

Defense PSUs and indigenous private sector defence manufacturers have set up their stalls to showcase their products at the Helipad Exhibition Centre at Gandhinagar. Representatives from more than 75 countries are attending the DefExpo 2022. It is the first-ever edition of DefExpo to exclusively feature Indian companies. Indian companies are showcasing a range of defence products manufactured by them like Anti-UAV directed energy weapons by Light Guide Optics and Shooting Range solutions by Zen technologies.

Indian Army is showcasing the defence systems procured from Indian companies like Long Range Reconnaissance system developed by Tata and advanced combat drones developed by Raphe mPhibr. The Army is also displaying the currently imported equipment to the Indian companies to encourage them to manufacture these in India. 1340 companies are registered to participate in DefExpo 2022, making it the biggest Indian defence exhibition to date. This biennial exhibition is organised to support, showcase and forge partnerships for the Indian aerospace and defence manufacturing sector with Indian as well as global customers.

<https://newsonair.com/2022/10/20/indian-companies-showcase-their-manufacturing-capabilities-at-defexpo-2022/>



*Fri, 21 Oct 2022*

## **Defence Expo 2020: India Targeting \$5 billion Exports by 2025, Says Rajnath**

India has set a target to achieve defence exports worth \$5 billion and an overall turnover of \$22 billion in production by 2025, defence minister Rajnath Singh said on Thursday. The Union minister's statement came as over 300 Memorandums of Understanding (MoU) were signed and several transfer of technology (ToT) agreements and product launches took place with an eye on total investments worth Rs. 1.5 lakh crore, during the ongoing Defence Expo 2022 in Gujarat's Gandhinagar on Thursday, according to a statement by the defence ministry. "The \$5 billion

export target set for 2025 reflects the intent of the government for export-oriented manufacturing...,” Singh said while speaking at a seminar jointly organised by the US-India Business Council and Society of Indian Defence Manufacturers at Mahatma Mandir here.

“The government is making efforts to take domestic defence production from the current \$12 billion to \$22 billion by 2025. We may even surpass this target of \$22 billion. There is no dearth of opportunities in the defence sector,” he added. The current era is a “golden period” of the Indian defence sector, Singh said. “Our defence industry is going through an important phase. Our industry has showcased its capabilities by manufacturing fighter aircraft, aircraft carriers, main battle tanks and attack helicopters,” he added. A total of 344 MoUs were signed and 46 product launches and 18 ToTs took place during the event on Thursday, according to the government statement. All of them seek to attract investments worth Rs. 1.5 lakh crore, it added. The Indian Air Force and Hindustan Aeronautics Limited concluded a contract for 70 HTT-40 indigenous trainer aircraft worth Rs. 6,800 crore, the statement said.

Singh invited US defence companies to set up manufacturing units in India and develop technological collaboration with Indian industries to create a “global supply chain free from vulnerabilities and uncertainties”. “The path to ‘Atmanirbhar Bharat’ or self-reliant India consists of a comprehensive set of policy frameworks that seeks to build indigenous technological and production capacity and capability with cooperation, participation and collaborations with reputed institutions and Original Equipment Manufacturers (OEMs) from friendly nations,” he said.

<https://www.hindustantimes.com/india-news/defence-expo-2020-india-targeting-5-billion-exports-by-2025-saysrajnath-101666291362368.html>



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

**Ministry of Defence**

*Thu, 20 Oct 2022*

## **Defence Secretary Dr Ajay Kumar holds bilateral meetings with delegations from Zimbabwe & Maldives on the Sidelines of DefExpo 2022**

Defence Secretary Dr Ajay Kumar conducted bilateral meetings with delegations from Zimbabwe and Maldives on October 20, 2022 on the sidelines of 12th DefExpo in Gandhinagar, Gujarat. A Zimbabwe delegation led by Amb. Mark Grey Marongwe, Secretary for Defence and War Veterans Affairs, met the Defence Secretary. Bilateral defence cooperation issues were discussed, particularly in the field of training and defence industry. The Defence Secretary later met a Maldivian delegation led by Ms Mariya Ahmed Didi, Minister of Defence, Maldives, accompanied by Maj Gen Abdullah Shamaal, Chief of Defence Force. A number of ongoing key defence cooperation issues were deliberated. They explored areas for future defence and defence industrial collaboration, including joint training and capability building.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869763>





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**Ministry of Defence**

*Thu, 20 Oct 2022*

## **Raksha Mantri Shri Rajnath Singh Holds Bilateral Meetings with Delegation Leaders from Madagascar, Mozambique, Mongolia & Suriname in Gandhinagar, Gujarat**

Raksha Mantri Shri Rajnath Singh, on October 20, 2022, held bilateral meetings with his counterparts from Madagascar, Mozambique, Mongolia & Suriname who are attending the 12th DefExpo in Gandhinagar, Gujarat and also participated in the India-Africa Defence Dialogue & Indian Ocean Region Plus Conclave. In the course of the meetings, Shri Rajnath Singh met with Lt Gen Rakotonirina Leon Jean Richard, Minister of National Defence, Madagascar; Mr Cristovao Artur Chume, Minister of National Defence, Mozambique; Mr Saikhanbayar Gursed, Defence Minister of Mongolia and Ms Krishnakoemarie Mathoera, Defense Minister of Suriname. The entire spectrum of defence cooperation was discussed during the meetings, with focus on identifying avenues to expand mutually beneficial collaboration.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869492>



**Press Information Bureau  
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**Ministry of Defence**

*Thu, 20 Oct 2022*

## **Defence Secretary Holds Bilateral Meetings with Delegations of Bangladesh & Kazakhstan on the Sidelines of DefExpo 2022**

Defence Secretary Dr Ajay Kumar, on October 19, 2022, held bilateral meetings with the delegations of Bangladesh and Kazakhstan on the sidelines of 12th DefExpo in Gandhinagar, Gujarat. He met a Bangladesh delegation led by Lt Gen Waker-Uz-Zaman, Principal Staff Officer, Armed Forces Division, Bangladesh. They reviewed the key ongoing bilateral defence cooperation issues between the two countries and explored ways to enhance defence industrial cooperation. The Defence Secretary, later, met the Kazakhstan delegation led by Lt Gen Ruslan Shpekbayev, Deputy Defence Minister, Kazakhstan. A number of bilateral defence cooperation issues were deliberated with particular focus on training, joint exercises and capability building.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869377>

## **UP Govt Signs 13 MoUs Worth Rs 564 cr at Defence Expo 2022: Minister Gupta**

The Uttar Pradesh government has inked 13 agreements with various firms promising investment worth Rs 564 crore in the state at the Defence Expo 2022 in Gujarat's Gandhinagar, state cabinet minister Nand Gopal Gupta has said. The MoUs have been inked by the Uttar Pradesh Expressways Industrial Development Authority (UPEIDA) and investments will be made in the UP Defence Industrial Corridor being developed by it, he said on Wednesday.

Gupta, the industrial development minister, is representing the state at the Defence Expo 2022, which was inaugurated by Prime Minister Narendra Modi in Gujarat's capital city on Wednesday. "With inspiration from the prime minister and under the leadership of Chief Minister Yogi Adityanath, Uttar Pradesh is continuously moving forward in the field of industrial development," the minister said, noting that the state has a "huge potential" in the industrial corridor for Ministry of Micro, Small and Medium Enterprises in the defence armament sector. Earlier in the day after unveiling the UPEIDA's stall at the mega event, the cabinet minister interacted with investors and informed them about the Defence and Aerospace Employment Promotion Policy, 2018 (Revised).

<https://economictimes.indiatimes.com/news/defence/up-govt-signs-13-mous-worth-rs-564-cr-at-defence-expo-2022-minister-gupta/articleshow/94978536.cms?from=mdr>

## **MoUs Worth Rs 1,53,000 crore Signed at DefExpo 2022**

As many as 451 Memorandums of Understanding (MoUs) and agreements worth Rs 1.53 lakh crore were signed during the Defence Expo or DefExpo 2022 at Gandhinagar, a senior official said. During the valedictory function of the 12th edition of DefExpo at the Mahatma Mandir convention centre, Defence Secretary Ajay Kumar informed the audience that it had broken previous records in terms of business generation. "This was the most outstanding defence expo ever. It saw the highest number of exhibitors, which is in addition to tens of thousands of business visitors. The extent of business this defence expo has generated has surpassed all the previous records," said Kumar.

Defence Minister Rajnath Singh and Gujarat Governor Acharya Devvrat were among those present on the dais during the function. "In the last defence expo, which was held in 2020 in Lucknow, 201 MoUs were signed. I am happy to report that today, 451 MoUs and agreements were signed. It involves an estimated amount of Rs 1,53,000 crore," said Kumar. MoUs and agreements were signed between "industry and industry, industry and state governments and

industry and central government," he said. The 12th edition of Defence Expo was the best to date and heralded an era of empowerment for the Indian defence sector, said Union minister Singh. "This is the beginning of self-reliance in the Indian Defence sector. This expo has shown that the future belongs to India. This expo has also shown that India will become a global defence manufacturing hub," Singh added.

<https://economictimes.indiatimes.com/news/defence/mous-worth-rs-153000-crore-signed-at-defexpo-2022/articleshow/94996441.cms?from=mdr>



*Thu, 20 Oct 2022*

## **Indian Army Design Bureau Develops Long-range Detonation System 'AgniAstra'**

The 12th edition of DefExpo has begun and is taking place at Gandhinagar in Gujarat. The event exhibits Land, Naval and Homeland Security Systems. One special feature of DefExpo-2022 is that the event has been kept exclusive to Indian companies. Following the inaugural ceremony of the event, an Indian Army officer showcased the indigenously-developed long-range detonation system called 'AgniAstra' at the India Pavilion.

Captain Rajprasad from the Army Design Bureau showcased the indigenously-developed AgniAstra, which has been described as a Multi-Target Remote-Controlled Blaster. AgniAstra is meant for utilisation in counter-insurgency and counter-terrorism operations and aims to minimise direct human intervention in the defusal of mines and improvised explosive devices (IEDs). According to the Indian Army, AgniAstra will cater to the needs of platoon commanders leading the troops into operations in a hostile environment, especially to counter the threat of IEDs and mines that are detonated by a remote control.

### **What is Army Design Bureau?**

Spearheading the Indian Army's Make-in-India initiative, the Army Design Bureau (ADB) undertakes technology scans and identification of technologies for acquisition and development. Moreover, the ADB facilitates research and development efforts with Industry, academia, DRDO & DPSUs, and provides inputs that enable them to understand user requirements while initiating cases of design and development with the industry. Captain Rajprasad of the Army Design Bureau had previously developed unmanned robotic platforms for the detection of mines and the disposal of IEDs. Moreover, he had also developed wireless electronic detonation systems for the long-range firing of targets. The officer's innovations were displayed by the Indian Army on Army Day in 2021.

<https://www.republicworld.com/india-news/general-news/indian-army-design-bureau-develops-long-range-detonation-system-agniastra-articleshow.html>

## THE ECONOMIC TIMES

*Fri, 21 Oct 2022*

### **Local Defence Contracts worth R. 8 Lakh cr Likely in Next 8 Years, Says Army Chief General Manoj Pande**

Army chief General Manoj Pande exuded confidence on Thursday that the Indian industry can deliver on urgent needs of the armed forces and said opportunities worth Rs.8 lakh crore are likely to come up in the next eight years as the drive for indigenisation continues. He said the army requires new technologies in various domains of warfare, including artificial intelligence-based satellite imagery interpretation, drone and counter drone systems, loitering munitions, quantum computing and mobility of troops which presents a viable market for the private sector.

"In the last three to four years, indigenous contracts have grown three times. In the next seven to eight years, we feel that the potential of the indigenous market will be about Rs. 7-8 lakh crore. It will be a viable market with adequate scope for the defence industry," Pande said in response to a question by ET. He said one of the key learnings from the ongoing Russia-Ukraine conflict has been the critical need to establish indigenous production lines and reduce import dependence, particularly when it comes to ammunition.

#### **Emergency Procurements**

Steps have been taken to enhance the private sector's understanding of the armed forces' requirements, said Pande. "We are handholding startups and smaller companies by making firing ranges available, easing trial and testing procedures, and making it easier to conduct demonstrations in forward areas so that the industry is able to understand our operating environment better," he said. The army chief said under the earlier rounds of emergency procurements for frontline troops deployed along the northern borders, contracts worth Rs.6,000 crore were placed and the process allowed the army to test out new equipment in forward areas, which can form the basis of larger capital procurements. The fourth round of emergency procurements, which are currently being processed by the army, will focus on indigenous products. Pande said the industry has risen up to the challenge by offering a variety of products.

[https://m.economictimes.com/news/defence/local-defence-contracts-worth-8-lakh-cr-likely-in-next-8-years-says-army-chief-general-manoj-pande/amp\\_articleshow/94998227.cms](https://m.economictimes.com/news/defence/local-defence-contracts-worth-8-lakh-cr-likely-in-next-8-years-says-army-chief-general-manoj-pande/amp_articleshow/94998227.cms)

*Thu, 20 Oct 2022*

## **Army to Procure Quad Copters, RPAs**

In an effort to boost surveillance capabilities along the borders with China and Pakistan, the Army will procure quad copters and mini remotely piloted aircraft (RPA). A tender or request for proposal(RFP) was issued on Thursday inviting bids from Indian manufacturers for 1,000 copters and 80 RPAs. The interested parties will have to submit their bids within a month and the Army will procure both these systems through fast track procedure. Quad copter has four rotors and provides relatively stable flight performance thereby enabling surveillance and aerial photography. The RPAs will have a range from 20 km to 60-90 km and help in identifying targets for the artillery for precision strikes in high altitude areas. Moreover, these RPAs weighing about 15 kilos will have endurance of more than 90 minutes and fly during day and night.

On Monday, the Army had issued tender for 363 logistics drones or unmanned aerial vehicles(UAV). These drones will provide the Army with the much-needed logistical backup for delivering goods to front line troops in remote and high altitude areas, sources said. The drones will be procured through fast track procedure from Indian manufacturers. While 163 drones will be deployed for high altitude areas, the remaining 200 UAVS are meant for medium altitude, they said. The RFP for buying 200 medium-altitude drones says the platforms should be capable of withstanding strong winds. The document says each medium-altitude logistics drone should be able to carry at least 20 kgs of payload and the overall weight of each platform would be around 100 kg. The weight of the payload for high-altitude logistics drones has been kept at not less than 15 kg. Both medium-altitude and high-altitude drones would also have a range of 10 km for delivering payloads, officials said.

<https://www.dailypioneer.com/2022/india/army-to-procure-quad-copters--rpas.html>

## **The Tribune**

*Fri, 21 Oct 2022*

## **Ready with Plan for Space Domain: IAF**

The Indian Air Force (IAF) has chalked out a road map for exploring the space domain and the immediate focus is on building a communication system through space, said the IAF Chief, Air Chief Marshal VR Chaudhari. “The IAF’s plan for using the space domain includes surveillance, positioning and targeting,” the IAF Chief told select journalists on the sidelines of DefExpo-2022 here today. Prime Minister Narendra Modi had yesterday launched “Mission DefSpace” that will allow the private sector to provide the defence forces with innovative solutions for 75 items used in the space sector. On the development of unmanned aerial vehicles (UAVs), Air Chief Chaudhari said, “The IAF is looking at several types of systems.”



This will include small drones to medium-altitude long-endurance and high-altitude long-endurance UAVs. To a query, the IAF Chief said, "The concept of manned and unmanned fighter jets is futuristic. The IAF will be looking at first establishing a network of drones." At present, the IAF operates one satellite, the GSAT-7A, which is equipped with Ku-band transponders and interlinks IAF fighter aircraft, airborne early warning and control (AEW&C) platforms, UAVs, ground radar stations and major airbases. Last November, the Ministry of Defence had approved the GSAT-7C meant to provide the IAF with secure communication.

<https://www.tribuneindia.com/news/nation/ready-with-plan-for-space-domain-iaf-443201>

## THE TIMES OF INDIA

*Fri, 21 Oct 2022*

### **India's Submarine Fleet to get Booster Dose Early Next Year**

After last week's test of a nuclear-capable ballistic missile from nuclear-powered submarine INS Arihant, India's underwater combat arm is set to get another major boost early next year with the induction of another nuclear and two diesel-electric conventional submarines. INS Sindhuratna, which had a major accident in February 2014 that killed two officers, is slated to return to Mumbai after undergoing a protracted "medium refit-cum-life extension" upgrade at Severodvinsk in Russia in February. INS Sindhuratna is the second of the four old Russian Kilo-class submarines earmarked to undergo the modernisation upgrade, each costing around Rs 1,400 crore, to stem the depletion in the conventional fleet.

The Navy will also commission the fifth of the six new French-origin Kalvari-class Scorpene submarines being built at Mazagon Docks under the over Rs 23,000 crore 'Project-75', with the last one following in 2024. They will be commissioned as INS Vagir and INS Vagsheer. With advanced stealth features, the Scorpenes are equipped with both long-range guided torpedoes as well as anti-ship missiles as well as advanced sonars and sensor suites. INS Vela, the fourth Scorpene commissioned last November, in fact, returned to its home port at Mumbai on October 15 after a record eight-and-a-half month long cross-coast deployment.

"INS Vela completed an extremely successful mission-based deployment across the Indian Ocean Region (IOR), which included extensive patrolling in the Bay of Bengal. The sustained deployment was in view of the increasing Chinese naval presence in the IOR," a source said. On the SSBN (nuclear-propelled submarines armed with nuclear-tipped ballistic missiles) front, the 6,000-tonne INS Arighat is also slated to be commissioned within the next few months. When she joins INS Arihant, she will add some teeth to India's strategic deterrence posture by strengthening the country's weakest leg of the nuclear triad. Under the Rs 90,000 crore advanced technology vessel (ATV) project, two more 7,000-tonne SSBNs (currently called S-4 and S-4\*) are under construction, with one of them being "launched into water" last year.

As of now, India however has just one operational SSBN in INS Arihant, armed only with short-range 750-km B-O5 or K-15 missiles. In the conventional fleet, apart from the four new Scorpenes, there are just six old Russian Kilo-class and four German HDW submarines. This when the projected requirement to deal with the collusive China-Pakistan threat in the maritime domain is at least 18 conventional submarines, four SSBNs and six nuclear-powered attack submarines (SSNs), as reported by TOI earlier. China is fast expanding its naval presence and

logistical bases in the IOR, and already fields the world's largest Navy that includes 50 diesel-electric and 10 nuclear submarines. It is also set to soon begin supplying eight Yuan-class diesel-electric submarines with air-independent propulsion (AIP) for greater underwater endurance to Pakistan.

In sharp contrast, India's long-pending over Rs 42,000 crore project to construct six new-generation conventional submarines with foreign collaboration is still to take off. Under this 'Project-75 India', the six submarines will have land-attack cruise missiles as well as AIP. But it will take almost a decade from now for the first such submarine to roll out. Similarly, the project to build six SSNs, each weighing over 6,000-tonne and costing around Rs 15,000 crore, is also stuck in the doldrums.

<https://timesofindia.indiatimes.com/india/indias-submarine-fleet-to-get-booster-dose-early-next-year/articleshow/94999131.cms>

# The Tribune

*Fri, 21 Oct 2022*

## **Eye on Niche Defence Tech, Made-in-India Engines, Chips**

The Ministry of Defence (MoD) has set its sights on three niche technologies: aero-engines, advanced materials used in the military technology and a production line for semiconductors, with “Make in India” being the driving force.

### Target areas

1. Aero-engines: Discussions are on with leading manufacturers to co-develop a new engine that can provide a 110 kilo Newton thrust to a jet. French company Safran, US’ General Electric and UK’s Rolls Royce have made offers.
2. Semiconductors: The MoD has tied up with the Ministry of Electronics and Information Technology (MeitY) to manufacture “chips” and develop an “Indian micro-processor chip”. The chips will be ready by the end of 2023 or early 2024, a source says.
3. Materials for the military: An MoD-appointed task force has identified the 10 most critical and strategic materials being imported today. It says the technology gaps can be bridged only by creating a national-level infrastructure.

Semi-conductors — also known as ‘chips’ in the engineering terminology — are used in fighter jets, copters, tanks, naval warships, submarines, missiles, night-vision devices, radars, displays for pilots, space applications and communication networks.

A senior MoD functionary told The Tribune, “Separate projects are in progress to achieve the goals. These technologies will form the basis of self-reliance.”

In case of aero-engines, discussions are on with leading manufacturers to co-develop a new engine that can provide 110 kilo Newton (kN) thrust to a fighter jet. To put this into perspective, the LCA Tejas uses a GE-404 engine that has 84 kN thrust.

French company Safran, US-based General Electric and UK-headquartered Rolls-Royce have made competitive offers to tie up with India's Gas Turbine Research Establishment (GTRE). This will be a "Make in India" project — from the design to the production stage.

As for semiconductors, the MoD has joined hands with the Ministry of Electronics and Information Technology (MeitY) to manufacture "chips" and develop an "Indian micro-processor chip".

"The MeitY will manufacture the chips. The ministry aims to get these by the end of 2023 or early 2024," a source said.

The two Union ministries will benefit from the "deployment-linked incentive (DLI)" to facilitate indigenous designing and manufacturing of secure semiconductor devices.

The primary goal is to have two versions of indigenously designed and developed 'secure chips'. About 50,000 such chips are expected to be deployed in systems and equipment for the armed forces.

At present, the forces are partially dependent on in-house labs of the Defence Research and Development Organisation (DRDO) for semiconductors. Semiconductor Laboratory, Mohali, is the manufacturing unit. A majority of the chips are imported.

On indigenous materials for the military, an MoD-appointed task force had, on October 18, released a report on what all it needed.

The report, a copy of which has been reviewed by The Tribune, states: "The task force identified the 10 most critical and strategic materials being imported today, with a total estimated annual import value of Rs 6,892 crore."

The task force has said the technology gaps can be bridged by creating a national-level infrastructure. In some categories of military materials such as carbon fibre, tungsten powder and boron carbide powder, full-scale capability does not exist. For these materials, high capital investment is required initially.

<https://www.tribuneindia.com/news/nation/eye-on-niche-defence-tech-made-in-india-engines-chips-443236>

## THE HINDU BusinessLine

*Thu, 20 Oct 2022*

### **Adani Defence to bring Commercial Version of VSHORADS Missiles in a year**

Of the defence manufacturing projects chosen for the joint development between Defence Research and Development Organisation (DRDO) and the industry, the indigenous missile Very Short Range Air Defence (VSHORAD) has been successfully tested, and a commercial version will be out in a year, stated a top official from Adani Defence. The company was tasked with developing missile products under Development-cum-Production Partner (DCPP) policy and the flight trials of VSHORADS systems in September 2022. "A couple of weeks back we had

successful flight trials of the VSHORADS systems. We are working as a DCCP partner of DRDO and the progress is very positive. In the next 12 months, we should be able to come out with an industrialised version of VSHORADS platform," said Ashish Rajvanshi, CEO of Adani Defence and Aerospace, on the sidelines of the DefExpo 2022 in Gandhinagar.

He added that the missile system VSHORADS is considered a significant need for the Indian Army and Indian Air Force. Under the DCCP policy, DRDO designs the product and hands over the drawings and technical particulars to the private or public industry to make a prototype. This prototype is then put to tests and trials. Based on the trial's outcome, these prototypes are allowed for commercial production.

### **Future roadmap**

Giving an overview of Adani Defence's future roadmap, Rajvanshi stated that the company is working to support Atmanirbhar Mission and help the country reduce imports of defence products. "What we have witnessed in Russia -Ukraine war is the use of information intelligence and the usage of javelins, stingers and missiles, which was able to bring down the heavy equipment. If you look at India, strengthening the air defence is a big priority. We are working with DRDO for the next gen technology in missiles and guided ammunitions," said Rajvanshi.

Adani is building next-level capabilities for end-to-end manufacturing of small arms such as artillery guns and howitzers - towed and mounted. The company is building India's largest integrated ammunition complex near Kanpur in Uttar Pradesh over 500 acres with a focus on small-medium and large-calibre ammunition, among others. Once commissioned, the company looks to export these products. "Exports across small arms, drones, ammunition portfolios will be an important chunk rather than just serving the local market," Rajvanshi said.

After forging a joint venture with Israeli firm Elbit Systems in 2016 for unmanned aerial vehicles (UAVs) or drones, Adani Group's defence arm, Adani Defence, has made two acquisitions. The first in 2018-19 of Alpha Design Technologies Pvt Ltd has operations in the designing, developing and manufacturing of defence electronics and avionics. And during the DefExpo 2022 on Tuesday, the company announced its second acquisition of maintenance, repair and overhaul (MRO) firm Air Works for an enterprise value of Rs. 400 crore. On further acquisitions, Rajvanshi said, "There are not many options available in this market. It (more acquisitions) is too early to say, but there are not many targets. We look for nuggets, where we think that future potential is much more than what they are doing today."

<https://www.thehindubusinessline.com/companies/adani-defence-to-bring-commercial-version-of-vshorads-missiles-in-a-year/article66035434.ece>

## How Atmanirbhar is India when it comes to Defence?

*By Ajai Shukla, Devangshu Datta & Bhaswar Kumar*

India is showcasing its metal at the ongoing Defence Expo in Gandhinagar. It is the first such event where only made-in-India equipment are on display. In line with the Aatmanirbhar theme, Prime Minister Narendra Modi inaugurated the event by highlighting that India had achieved Rs 13,000 crore in defence exports in FY22. The 155 millimetre, 52 calibre Advanced Towed Artillery Gun System, or ATAGS, which the DRDO is developing in partnership with the Tata and Kalyani groups, has become an indigenisation milestone.

Now, the DRDO has produced an offshoot of the ATAGS, called the Mounted Gun System, or MGS. The new weapons system is a prominent part of the India Pavilion and the DRDO display, which is the DefExpo 22's centrepiece, owing to the 'Aatmanirbhar Bharat' emphasis. The Mounted Gun System is made up of the ATAGS gun mounted onto a wheeled tractor, from where it can be fired without lengthy preparations. Bringing the MGS into action takes just 80 seconds, leaving the enemy with little time to react. Bringing it out of action also takes 85 seconds - a god-sent when the enemy brings down counter fire. The Indian Army's artillery plan calls for the purchase of 814 MGSs. And, the DRDO is confident about the superiority of its system, because of its high accuracy and performance in deserts and high-altitude areas.

The next example of successful indigenisation is the DRDO-developed Wheeled Armoured Platform, or WhaP. It will be the basis for a family of mobile, protected multi-purpose vehicles. They will also be able to serve as command posts or conduct reconnaissance, even in chemical, biological, radiological and nuclear battlefields. The amphibious and highly mobile 8x8 wheeled vehicle will be armed with a 30 mm cannon and an upgraded, Made in India sighting system. Private player Larsen & Toubro is working with DRDO as a 'design cum production partner' for this project. Another Made in India weapon system that may be headed for success is DRDO's 25-tonne light tank, meant for mountain border areas, jungles, narrow roads and bridges. The 2020 Chinese encroachment across the Line of Actual Control galvanised the DRDO into resuming work on the tank under Project Zorawar, named after the legendary Sikh general who took his armies deep into Tibet. By November 2024, the DRDO is scheduled to finish trials and begin delivery to the army.

The Expo has more than 1,300 exhibitors from the Indian defence industry, along with some joint ventures with foreign original equipment manufacturers. More than a 100 startups are also making their presence felt. PM Modi said that the expo would also see the signing of more than 400 Memoranda of Understanding, a record. The data, too, supports that progress had been made in indigenisation. A *Business Standard* analysis of defence capital allocations in the Union Budgets shows that spending, after adjusting for inflation, has grown at a compounded rate of around 7% between FY12 and FY23.

But what shows a discernible shift towards indigenisation is that while domestic rupee-denominated spending has grown at 8.2% a year on average over the 11-year period, imports have grown at just 1.2%. In the base year of FY12, India imported \$5.7 billion worth of defence



equipment. In 2022-23, it intends to import \$6.5 billion. It does appear that the efforts to indigenise are slowly making an impact.

But, while a certain measure of success has been achieved in developing key weapons platforms, crucial gaps still remain. Experts believe that developing indigenous aero-engines is a strategic necessity, given the proliferation of unmanned aerial vehicles and low-cost cruise missiles, and the restrictions placed by foreign governments on the export of their engines and components.

Indigenising gas turbine engines can save the Ministry of Defence Rs 3 trillion in the next 20 years. But due to a trust deficit and the absence of inclusive policies for involving qualified and globally certified private players, aero engine research and development remains a monopoly of the public sector. Further, the lack of testing infrastructure in India, for instance, caused a delay of six years in the development of the Kaveri engine that was originally meant for the Tejas light combat aircraft. The engine was however deemed unfit for Tejas as it could not attain the peak thrust required for the fighter jet during flight testing in Russia. At present, India continues to search for foreign partners to co-develop heavier combat jet engines.

Also, be it artillery guns or India's ambitious stealth combat aircraft, there's one last crucial factor that could make or break these projects. At DefExpo 2022, Prime Minister Narendra Modi set a target of 40,000 crore rupees in annual defence exports, representing a near three-fold jump from 13,000 crore rupees in FY22. While deals like this year's sale of BrahMos missiles to the Philippines stand out as examples of India's success in this regard, meeting the PM's ambitious goals will require a quantum leap in India's weapons making capabilities.

[https://www.business-standard.com/podcast/current-affairs/how-atmanirbhar-is-india-when-it-comes-to-defence-122102100234\\_1.html](https://www.business-standard.com/podcast/current-affairs/how-atmanirbhar-is-india-when-it-comes-to-defence-122102100234_1.html)

## THE TIMES OF INDIA

*Thu, 20 Oct 2022*

### **Making India Aatmanirbhar in Defence Technologies**

Today technology has become the nucleus around which the next phase of growth is happening. In what is being hailed as 'techade of India', new age technologies such as AI, ML and data analytics are playing a crucial role in strengthening India's capabilities in every sector. As defence is one of the most crucial aspects which can't be overlooked at any cost, innovative ways are constantly being chalked out to strengthen the country's internal or external security covers. India today proudly stands tall as the 3rd largest startup ecosystem in the world, and with government support, policy developments, investments, innovation and large-scale technology adoption, defence tech startups are leaving no stones unturned to make India resilient against any possible threat.

The Indian government is actively supporting India's defence industry to identify and manufacture state-of-the-art cost-effective products and technologies to realise Prime Minister Modi's vision of a 'New India' that not only caters to its own needs, but also fulfils international requirements. It is indeed encouraging that the government has earmarked 25 per cent of defence R&D budget for private industry and start-ups which will pave the way for innovation of new

defence technologies in India. As India establishes its dominance on economy, politics and strategic affairs globally, it is imperative that the country meets all its defence requirements which are indigenously developed to deal with internal or external threats and also for economic benefits with defence exports. The Indian government has set of Rs 1.75 lakh crore of defence production by 2025, which includes export of Rs 35,000 crore and Indian startups have a defining role to play in this. Keeping innovation, R&D, and visions like Atmanirbhar Bharat and Make in India in focus, the Indian startups in defence tech are doing outstanding work to cater to India's defence needs.

Nowadays, startups are capable of offering technologically advanced and superior made in India solutions to serve the defence, paramilitary forces, aerospace, critical assets and others to safeguard India and bolster the country's defence exports. As surveillance is extremely critical in security, it has become possible to solve surveillance-related challenges with hitech long-distance imaging systems. These surveillance systems are capable of guarding India's strategic assets and helping defence forces like BSF, ITBP, AR, and Coast Guard to remain vigilant and keep a watchful eye on trespassing at borders. Moreover, the systems are also supporting CRPF, central and state police for better law implementation within cities as well. Additionally for aerial surveillance, India has made substantial progress in coming up with UAVs for intelligence, surveillance, and reconnaissance of moving and fixed targets. These aerial vehicles are extremely useful for supply and drops and are already being used by BSF, NDRF, and state police departments for various applications and operations.

There are many startups which are dedicated to robotics technology to come up with robots to keep soldiers safe and help in combat. These robots are deployed in combat scenarios and are extremely helpful in reducing loss of human lives and establishing military superiority. Furthermore, they are being utilised for bomb detection, disaster relief operations, training exercises, surveillance and others. Moreover, startups are leveraging visual computing technology for offering 3D geospatial solutions, GIS, simulation, and visualisation. With the help of these, it becomes easier to visualise and analyse geographical challenges and create simulated environments to prepare for possible threats. India is the largest importer of arms and it depends on countries like Russia, France, Israel, and the US among others for its defence tech needs. At this juncture, the startups along with established firms are playing a crucial role in achieving selfreliance in defence technology.

India has already laid the foundation stone of a burgeoning semiconductor ecosystem and many other developments, global partnerships and investments have unlocked huge opportunities for the country's startups and tech companies. Strategic partnerships with the right foreign companies and the right allies will further strengthen the Indian Defence Industry resolve, and make India Aatmanirbhar. For India which faces threats in many ways, it is the only viable solution to shift to Made in India technology for its defence needs to prepare for challenges on all fronts.

<https://timesofindia.indiatimes.com/blogs/voices/making-india-aatmanirbhar-in-defence-technologies/>

*Thu, 20 Oct 2022*

## **A Day Dedicated to Remembrance of Indian Armed Forces**

On October 20, 1962, India's northern neighbour, China dispatched an assault on the country's borders. During the following weeks, the world saw an inspiring show of fundamental solidarity, which was the solidarity of the Indian public. Since then, India started observing National Solidarity Day on October 20 in the wake of the mortifying thrashing of the Indian military because of China in 1962. The recognition of this day is an annual token of this crucial solidarity. On this day, the musings of the entire country go to our Armed Forces who have, since forever, been celebrated for their boldness and endurance.

A board of trustees with then head administrator and Prime Minister Indira Gandhi, among others, was associated with observing National Solidarity Day in 1966. Throughout their long term, the committee's essential function during the Sino-Indian war and prior battles with Pakistan, seems to have gradually blurred. The Citizens Central Council mentioned that National Solidarity Day should continue to be observed each year. The board requested that the home service issue guidelines to all focal government workplaces and public area endeavours watch the Day in a befitting way.

In 1966, National Solidarity Day began with the executive's transmission to the country. The oath was taken and the public hymn was sung at public gatherings and taluk central command. Ceremonies were held in similar capacities at universities and schools, at NCC meets and missions abroad, as well as in government workplaces and PSUs. The day is advanced through all types of media including magazine articles, talks at legitimate occasions, and websites from gatherings, people or associations focused on general solidarity.

### **More about National Solidarity Day**

A day to commend our solidarity in diversity; A day to raise public consciousness of the significance of solidarity; A day to remind governments to regard their duties to peaceful accords; A day to support new activities for destitution annihilation; A day to advance solidarity for the accomplishment of Sustainable Development Goals including the neediness annihilation.

### **Exercises may incorporate advancing efforts such as:**

Accomplishing all-inclusive instruction

Making well-being and medicines more available to the less fortunate

Forbidding certain area mines

Aiding ventures that help individuals who endured the impacts of regular or man-made calamities

Battling against debasement, destitution, and psychological warfare

### **Sino – Indian War**

The Sino-Indian War, also known as the Indo-China War and the Sino-Indian Border Conflict, was a 1962 battle between India and China. The fundamental reason for it was a Chinese-

contested Himalayan outskirts. Following the 1959 Tibetan uprising, there had been a progression of vicious fringe engagements between the two countries when India conceded refuge to the Dalai Lama. India then started a Forward Policy in 1960 to block Chinese military watches and coordination, in which it set up stations along the outskirts, including a few north of the McMahon Line.

Chinese military activity became increasingly forceful after India dismissed Chinese political settlements all through 1960 and 1962, with China re-initiating already prohibited 'forward watches' in Ladakh from 30<sup>th</sup> April 1962. Finally, China deserted all endeavours of serene goal on 20<sup>th</sup> October 1962, attacking an area along the 3,225-kilometre-long Himalayan outskirts in Ladakh and over the McMahon Line. Chinese soldiers progressed over Indian powers in the two theatres, capturing Rezang La in Chushul in the western theatre, and Tawang in the eastern theatre. The war ended when China declared a truce on 20<sup>th</sup> November 1962 and its withdrawal to its guaranteed 'Line of Actual Control.' The Sino-Indian War was additionally remarkable for the absence of maritime and elevated resources by either India or China. Additionally, as the Sino-Soviet split warmed up, Moscow put forth a significant attempt to help India, particularly with the offer of cutting-edge MiG contender aircraft.

### **Background of Solidarity Day**

Solidarity refers to an association of purposes, interests, or feelings among individuals from a gathering. World leaders and pioneers concurred in the Millennium Declaration that solidarity was highly essential for global relations in the 21<sup>st</sup> century. Considering globalization and the resulting developing disparity, the UN realized that worldwide solidarity and collaboration were important to accomplish its Millennium Development Goals. The UN too was established with the vision of solidarity and agreement by means of aggregate security that depends on its individuals' solidarity to join hands for the purpose of global harmony and security.

[https://www.financialexpress.com/defence/a-day-dedicated-to-remembrance-of-indian-armed-forces/2722707/lite/?utm\\_source=defence\\_landing\\_page&utm\\_medium=article\\_listing\\_widget&utm\\_campaign=Tags](https://www.financialexpress.com/defence/a-day-dedicated-to-remembrance-of-indian-armed-forces/2722707/lite/?utm_source=defence_landing_page&utm_medium=article_listing_widget&utm_campaign=Tags)



*Thu, 20 Oct 2022*

## **Exclusive Interview: MKU a strong patron of Make in India says CEO of Netro Optronics**

International Security and Defence Company MKU which is based in Kanpur has been providing security and defence solutions to governments/armed forces in more than 100 countries across the globe. Prachi Gupta leads the company's optronics division. Optronics solutions are the most critical requirement for the modern soldiers in combat situations and could make a huge difference in the final outcome of operations being carried out.

The young CEO of Netro Optronics, Prachi Gupta holds a BE degree (Systems Engineering) from the University of Warwick, UK. In her seven years long presence in the company she

introduced the optronics division and has opened up new horizons for defence technology around the world. On the sidelines of the ongoing DefExpo 2022, Gandhinagar, Gupta shares her thoughts as a young CEO and challenges with Huma Siddiqui.

### **Following are excerpts**

#### **Are You the first woman CEO of a company dealing with defence solutions in India?**

I think I could be; I've never checked! Although I do have a lot of peers in India and abroad who are at high-level leadership positions in the defence industry. Not just them, CEO of BAE, (Linda Hudson); VP of Engineering & Technology for Rockwell Collins, (Nan Mattai); the Chairman and CEO of General Dynamics (Phebe Novakovic); and the Chairman, CEO and President of Northrop Grumman (Kathy Warden) are all women.

#### **MKU has been a global player in the defence industry for the past many years. How did it all begin for you?**

I joined MKU 7 years ago when I was 21. It was not a smooth sail initially since defence is one such industry where it requires thorough R&D, in-depth knowledge of technologies, a good grasp on the sales cycle, and of course, and great perseverance. I was given the opportunity to join the Netro Optronics division of MKU after I strengthened my base of optics, electronics and product design under the mentorship of some great experts we have on board from the past several years. It did take me a bit of time to get a hang of how the industry works, but once I was able to understand the end user's perspective, it gave me the confidence to take the Optronics division forward and make a mark in the industry.

#### **Challenges you face when you meet global players?**

I cannot comment for other companies in India, but I do feel MKU has built a strong reputation for itself in the global market in the last 37 years. We have had the Indian Government and Missions overseas support us at each step since we opened our business up for exports. Participating at various international trade shows and actually taking an honest interest in the future of defence technology not just for India but with a global outlook has had quite an impact on how we are seen.

My father, Manoj Gupta, Chairman of MKU has spearheaded our working in a way that we understand and simulate real time challenges that heroes in the line of duty face, and work backwards. I would say that has made all the difference. We have got so many instances where soldiers and policemen from countries where we have supplied come to us, and we make it a point to understand how we've done and what can be improved. And that's pretty much our outlook to innovation, the core being it makes it 'meaningful' for those in the line of duty. Of course, I wouldn't say that each country would rather prefer that players from their own economy get the chance to grow, but that has not been a major challenge for us so far.

#### **What exactly is it that you are selling globally?**

MKU houses three brands for two kinds of forces: Netro, Kavro and Autro respectively for Defence and Homeland Security. Netro Optronics (which I lead) comprises a wide spectrum of Advanced Optronic Solutions for Soldiers and Platforms with Night Vision, Thermal, Day Optic and Laser Optic Technologies, that are channelised to design and develop surveillance and situational awareness devices. We very recently launched an Aviation Night Vision Goggle for



Aircraft Pilots, a high-tech Sighting System for Grenade Launchers and a Driver Night Sight for T-90 Tanks for which we were awarded the Transfer of Technology by DRDO itself.

Kavro Protection is also further divided into innovation solutions like Body Armours, Ballistic Helmets, Shields and Armour Inserts for Defence and Law Enforcement and the End-to-End Project Management from Design, Development, Manufacturing and Integration of Armouring solutions for Land, Naval and Air Vessels. Infact, from what I was saying before about 'listening' to the challenges of the end users, our most recent development at Kavro Soldier Protection, the 'Veer Helmet' gained quite a bit of popularity a few months ago! It was an emotional couple of weeks for us not just because we received so much appreciation, but because we knew our solution was a game changer in adding to the confidence and comfort of Sikh heroes in the line of duty.

As for Autro, we have recently ventured into Platform Intelligence for Law Enforcement Agencies and Military Forces wherein we have amalgamated solutions for Fleet Control and AI-Based Video Telematics. It's at nascent stages and even then has a lot of traction coming its way from global markets.

### **Is this all Made in India?**

Yes! MKU is a strong patron of the Make in India Initiative. We have an extensive infrastructure where we manufacture and test our solutions.

### **This is a sector which is male dominated. How do you perceive the challenges?**

Who says it's a man's world? It's 2022! But it is evident that the defence industry is relatively male-dominated, so speaks the stats! Even though the times have changed and the world has advanced, we are yet to make way for more female leaders in defence. I believe that I have been given equal opportunity and respect in my line of work. In fact, my experience from around the world over has taught me that you need to make your own place in the world, man or woman does not matter after a point.

You could say at some level that the entry barriers for men in business are lesser, however I don't think I've ever felt the need to validate myself in a room full of people for the fact that I'm a woman. As far as presentations go, I trust my solutions and our brilliant team of engineers back home at MKU that do the talking for themselves. I am just a humble representative!

### **How do you set goals and what keeps you motivated?**

I think a large part of goal-setting comes with the understanding that not everything will happen as per plan. Nonetheless, my style of working is to align on a large vision and break it down to smaller goals. Then it's really about starting more than anything, you know? That's the biggest challenge one has to overcome.

We often don't realise that we are capable of a lot more than we give ourselves credit for and that's something I tell even my team almost every day. So as far as motivation goes, I am my own person. I have realised that I don't flinch when I hit momentum and that's something I have had to cultivate. At the end of the day: the people around you will love you and support you whether or not you achieve your goals. It's about whether you will be able to love you and support you if you don't. And that's how I define what's important to me.

**Lastly, any message for the young girls out there who would like to pursue this line?**

Oh, come to MKU! I am serious, we would love to have you here! I have actually even started an initiative at MKU called ‘Sheroes’ where we groom the women in the company to take challenging and leadership roles head-on.

But to sum up for any young girl watching this, defence industry or not: Own your goals, Watch the company you keep and make sure you celebrate the little wins.

<https://www.financialexpress.com/defence/exclusive-interview-mku-a-strong-patron-of-make-in-india-says-ceo-ofnetro-optronics/2722134/lite/>



*Fri, 21 Oct 2022*

## **Moscow ‘Sweetens the Deal’ for India; Delhi Mulls Russian ToT & Production Assistance for Sprut Light Tanks**

The proposal languished till 2017 when the MoD asked the Army to draw up requirements for a light tank after China tested its Type-15 tank equipped with a 105mm main gun and a 1,000-horsepower engine. In an interview with National Defense in March 2019, speaking on the Indian Army’s mechanized forces, Lt Gen AB Shivane (Retd.) revealed that the Indian Army plans to procure light tanks to counter the PLA’s deployment of Type 15 light tanks. In February 2020, the PLA surreptitiously occupied India-claimed territory along the LAC. India responded by deploying its T-90S and T-72 main battle tanks (weighing 40 to 50 tons each) in eastern Ladakh.

The experience of deploying heavy tanks underlined the importance and urgency of procuring “much more maneuverable” and “operationally flexible” light tanks, with adequate firepower, in mountainous terrains. In April 2021, the Indian Army (IA) issued an initial Request for Information (RFI) to vendors for the procurement of 350 new generation light tanks, less than 25-ton in weight, in a project under the Make in India with the transfer of technology (ToT).

There is an urgency to procure light tanks, and the government is in no mood to brook any nonsense that impedes the procurement or restricts India’s choices. Clearly, it is imperative to acquire light tanks and the technology to manufacture them within the country.

### **Leading Contenders**

The leading contenders for fulfilling the IA’s light tank requirement are as follows.

#### **Russia’s Sprut SDMI –**

The Sprut is an 18-ton tank with a 450-hp engine supporting a 125mm main gun – the same as the main gun on IA T-90 & T-72 tanks. Sprut is amphibious, air-droppable, and in operational service. The Sprut-SDM1 could use all the ammunition produced in India for T-72M1 and T-90S tanks.

### **South Korea's Hanwha Defense's K21-105 –**

This is a yet-to-be-developed proposed 25-ton tank with a 750-hp power pack. The tank would be built in India by L&T. Its turret would be Belgian.

### **DRDO's Zorawar –**

The highlight of this tank would be its yet-to-be-built 1000-hp High Altitude Operable Power pack (Engine+Transmission). No word on its weight, gun armament, or amphibious capability. The tank is likely to be too heavy to be air-droppable. The Russian Sprut SDMI appears ahead of the pack, but the problem is – it's Russian! Could India defy Western pressure and procure what the IA needs urgently from Russia?

### **Foreign Policy Will Not Sacrifice India's Interests**

During his recent visit to the Australian capital, Canberra, India's External Affairs minister S Jaishankar on October 10, 2022, said, "We have a long-standing relationship with Russia, and this relationship has served our interests well. We have a substantial inventory of Soviet & Russian-origin weapons." Explaining the rationale for India's continued defense relationship with Russia, Jaishankar said, "This (Russian weapons) inventory grew for various reasons, including the West not supplying weapons to India for decades & seeing the military dictatorship next to us as the preferred partner. In international politics, we make judgments reflective of our future interests and current situation."

### **Russia Sweetens The Deal**

Russia has shown an understanding of India's desire for neutrality between it and the West. It is attempting to sweeten the Sprut deal for India to an extent where India would be willing to shrug off Western pressures – by offering ToT and production assistance. "We are ready to transfer technologies and provide assistance in launching the manufacture of the tank in India," a Rosoboronexport official told the press ahead of DefExpo 2022.

Talking of the features of the Sprut-SDM1, the Rosoboronexport official said it was the only light amphibious combat vehicle in its class having the firepower of the main battle tank and equipped with a 125 mm tank gun. "The Sprut-SDM1 can use all the ammunition produced in India for T-72M1 and T-90S tanks," he stated. The Sprut can cross water obstacles and fire its gun while afloat, disembark from a ship, and operate day and night on terrain — in the high mountains in conditions of thin air, at very high and low temperatures, the official elaborated. He added that the tank has a guided missile system to defeat armored targets, including those with ERA, at ranges up to five kilometers.

### **The Imperative To Build Indian**

Operational urgency could compel India to fulfill its immediate Light Tank requirement through foreign collaboration (either for the full system or components such as turret, engine, and transmission), but, likely, India will not abandon the DRDO's Zorawar light tank project. Tanks – light, medium, and heavy, Infantry Fighting Vehicles (IFVs) and gun/missile mobility platforms represent a large part of the IA's combat capability. India needs to acquire the capability to manufacture the entire spectrum of the components that go into armored vehicles – power packs, turrets, sensors, and protective armor.

Reliance on imported armor can be toned down as soon as our capabilities mature using the import ban list mechanism. Procurement strategies must be creative and aimed at maintaining

deterrence while favoring indigenous design development and production. Early induction of suitable weapon systems has a deterrence effect often lost on defense planners. Had the Indian Army procured light tanks soon after it felt the need for them in 2009, it is moot whether the Chinese incursions of February 2020 would have taken place.

<https://eurasianimes.com/india-shrugs-away-western-concerns-over-its-military-ties-with-russia/>

## THE ECONOMIC TIMES

*Fri, 21 Oct 2022*

### **Boeing order could bring in more investments to India: Ted Colbert, CEO, Boeing Defence, Space & Security**

Committing to make long-term investments in India, US defence and aviation giant Boeing has said that it is seeking to create enabling capacities here across the value chain - from design, engineering and manufacturing to sustainment of weapon systems. Speaking with ET, Ted Colbert, CEO, Boeing Defence, Space & Security, said that if its F/A 18 Super Hornet is selected by the navy for its requirement of carrier-borne fighters, the company estimates that the project will have a \$ 3.6 billion impact on the Indian economy. This, the company says, would come from creating a supply chain, research and engineering and even incremental manufacturing of the jets that could be brought to India. "My dream is for the next generation to wake up in the morning and see the Boeing logo and believe it is an Indian company. The only way to do that is by continuing to grow our investments across the entire life cycle - design, engineering, supply chain, training, maintenance and support," Colbert said on the sidelines of DefExpo, India's biggest military exhibition.

Boeing has already supplied cutting-edge weapon systems to India - including the P8I maritime aircraft and Apache attack helicopters - and is currently in competition with French manufacturer Dassault for an Indian requirement of carrier-borne jets. "We believe we put forth a very good offering and we have feedback that the user loves our product. The interoperability (of the F/A 18) with our other products like the P8 I to support missions is a strong piece of the offering," he said.

The navy is currently accessing results of trials it carried out on both the US and French offerings and a shortlisting is expected before end of the year. The order for new jets will be placed under the government-to-government procurement mode. On other possible collaborations, the Boeing executive said that the Mk2 version of the Light Combat Aircraft (LCA) and India's new medium-lift helicopter plans are being considered. Colbert said that there are opportunities to co-develop and co-produce the aircraft, leveraging Boeing's partnership with the Tata Group that produces components and parts for several platforms, including the Apache helicopters.

<https://economictimes.indiatimes.com/news/defence/boeing-order-could-bring-in-more-investments-to-india-ted-colbert-ceo-boeing-defence-space-security/articleshow/94996871.cms?from=mdr>

## **1st Evidence! Germany's 'Much-Touted' IRIS-T Defense System Used by Ukraine 'Clashes' with Russian Missile**

The German government had received severe criticism for the slow transfer of advanced weaponry to Ukraine. While the US promised to expedite the delivery of NASAMS in the wake of Russia's air raid, Berlin rushed to deliver the first unit of IRIS-T. The wreckage of an IRIS-T SLM missile was photographed on October 19, reportedly in or close to the capital Kyiv. The internet was soon flooded with images of the IRIS-T missile's tail portion lying on the ground.

This is significant as it comes at a time when Russia has been pounding Ukraine's urban centers with cruise missiles and Iranian Shahed-136 kamikaze drones. As soon as the image went viral, social media sprang into action, and some military watchers suggested that the Russian long-range cruise missile Kh-101 was one of the targets eliminated by IRIS-T. However, EurAsian Times could not independently verify the targets that were struck (or not) by the IRIS-T surface-to-air missiles. According to the Ukrainian Ministry of Defense, the IRIS-T system has reportedly been deployed in southern Ukraine. From there, the system might be able to intercept Russian missiles fired from ships and submarines in the Black Sea that are destined for targets in important port cities and other places. German officials claim they have already sent one fully operational IRIS-T SLM system and an unknown number of IRIS-T missiles and will eventually deliver three more. According to Diehl Defense, a typical single IRIS-T SLM system consists of three mobile launchers, a truck-mounted multi-function radar, and another truck modified as a command post vehicle.

The truck-mounted missile system is built to take out combat aircraft, attack helicopters, cruise missiles, rocket artillery, drones, anti-radar missiles, and bombs. It also features a multipurpose radar that can track multiple targets at once. A high-precision terminal approach with significant direct hit probability is made possible by the missile's imaging infrared (IIR) seeker. A data link is used to direct the interceptor missile toward its target, and once it is within striking distance, its infrared imaging seeker acquires the target for the last phase of the engagement. The recent increase in Russian missile and drone attacks on Ukrainian sites and reports that Iranian authorities plan to sell short-range ballistic missiles to Russia only highlight the country's need for more significant air and missile defenses. The US is also moving to help Ukraine establish an integrated layered missile defense system. Ukrainian President Volodymyr Zelensky stated that IRIS-T SLM had demonstrated itself exceptionally and is a truly effective system. Meanwhile, the defense minister for Ukraine, Oleksii Reznikov, had also thanked his German counterpart, Christine Lambrecht, through Twitter for facilitating the agreement.

### **Is IRIS-T Fending Off Russian Attacks?**

While social media users backing Ukraine believed that the IRIS-T could be credited with the lion's share of missiles taken down after it was deployed, the images released on the



internet led to some skepticism among military experts. According to Indian Air Force veteran Squadron Leader Vijander K Thakur (retired), “The wreckage suggests that the missile self-destructed after failing to strike the target. The rear rocket motor section would have been extensively damaged if it had struck the target from a direct hit or proximity fuse detonation. The rear section would have been unrecognizable.” Pro-Russian Twitter accounts took a jibe at the IRIS-T surface-to-air missile by saying that the system was “sleeping” and could not deal a blow to Russian missiles and drones.

On October 17, a drone storm was reported in Kyiv, with about 22 explosions rocking the capital. This led military watchers to quickly suggest that Ukrainian air defenses, including the IRIS-T, were not working. However, soon after the IRIS-T’s use in Ukraine became known, the Defense Ministry of Ukraine tweeted: “More Iranian drones and Russian missiles have gone the way of the Russian warship,” which could be understood as a reference to the sinking of Moskva in April. Ukraine claimed to have downed several kamikaze drones deployed by Russia in the last week, a trend it claims is continuing. The cost differential between the kamikaze drones deployed by Russia and the Surface to Air missiles used by Ukraine has also become a point of discussion. Shahed-136 suicide drones are way cheaper than missiles used to destroy them. One Twitter user said, “Each IRIS-T missile costs \$430,000; let that sink in.” The cost of one Shahed-136 is believed to be around \$20,000.

That being said, given the barrage of missiles and kamikaze drones raining down on Ukraine’s urban centers and civilian infrastructure, Ukraine has placed its best bet on air defense systems. Rafael Loss, a defense specialist at the European Council on Foreign Relations (ECFR), stated that although the new systems were not necessarily the “game changer,” the Ukrainians had been touting them as they were likely to improve Ukraine’s defenses greatly. “As they receive more and more sophisticated systems that they can integrate into their existing systems, mass missile strikes will be more difficult for the Russians to pull off, and there is a greater chance that fewer civilians and fewer military targets will be hit,” he told DW.

Diehl claims that the system is most effective in conjunction with other “layered air defense” systems, such as the Patriot PAC-3 missile defense system, which is produced in the US and has a higher maximum altitude. The US administration stated last week that it hoped to quickly deploy the first two National Surface-to-Air Missile Systems (NASAMS) to Ukraine. American officials say the Ukrainian armed forces will get eight NASAMS in total. Even though NASAMS can launch various missiles, the system’s primary interceptor will be the AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM). These advanced western air defense systems will help protect the Ukrainian skies as the aerial raid continues unabated.

<https://eurasianimes.com/1st-evidence-germanys-much-touted-iris-t-defense-system-used/>

*Thu, 20 Oct 2022*

## **Russian Aircraft Fired Missile Near British Plane Over Black Sea: UK Minister**

A Russian aircraft released a missile near a British aircraft patrolling in international airspace over the Black Sea on 29 September, defence minister Ben Wallace said on Thursday. Wallace informed parliament that Britain had suspended patrols following the incident and expressed their concerns to Russia's Defence Minister Sergei Shoigu. "In light of this potentially dangerous engagement, I have communicated my concerns to Russian counterpart," Wallace said.

However, Russia said that it was a technical malfunction and Wallace said Britain has now resumed patrols. Russia has acknowledged that the incident took place in international airspace. Meanwhile, British Foreign Secretary James Cleverly will make an announcement later today about taking action using Britain's autonomous sanctions regime concerning Iranian drones. Russia has launched dozens of "kamikaze" drones on Ukraine on hitting energy infrastructure and killing five people in the capital of Kyiv. Ukraine says they are Iranian-made Shahed-136 attack drones. Tehran denies supplying the drones to Moscow and the Kremlin on Tuesday denied its forces had used Iranian drones to attack Ukraine. Washington says Iran's denial is a lie. Britain has condemned what it said was Iran's decision to supply drones and training to Russia.

"Iran supplying drones is inconsistent with UN Security Council resolution 2231 and is further evidence of the role Iran plays in undermining global security," a foreign office spokesperson said. There were no further details on how the announcement would be made, or what measures would be taken.

<https://www.livemint.com/news/world/russian-aircraft-fired-missile-near-british-plane-over-black-sea-uk-minister-11666264452510.html>

# THE TIMES OF INDIA

*Fri, 21 Oct 2022*

## **ISRO Confident to Launch Maiden Sun Mission Early Next Year, Chandrayaan-3 to Wait Till Mid-2023**

The Indian Space Research Organisation (Isro), which has multiple big science projects in its pipeline, will only be able to launch its third mission to , Chandrayaan-3, in June or July next year, while it is more confident of launching its maiden mission to study Sun, Aditya-L1, in the first quarter of next calendar year. Chandrayaan-3, on the other hand, will be Isro's second attempt at landing payload on the lunar surface after the failure of Chandrayaan-2. Isro chairman S Somanath told TOI: "We are scheduling the launch only in June-July next year, while Aditya will happen before that. Aditya could be possible in January or February as payload integration is going on. But we'll have to look at the availability of the PSLV and there are also some other factors."

Aditya-L1, the first observatory-class space-based solar mission from India, will be placed in a halo orbit around the first Lagrange point (L1) of the Sun-Earth system. A satellite around the L1 point has the major advantage of continuously viewing the Sun without occultation/eclipses. According to Isro, this position provides a greater advantage of observing solar activities continuously. Aditya-L1 carries seven payloads to observe the photosphere, chromosphere, and the outermost layers of the Sun (the corona) using electromagnetic and particle detectors. Four payloads directly view the Sun from the unique vantage point of L1, and the remaining three carry out in-situ studies of particles and fields at L1.

Sankarasubramanian K has been designated the principal investigator of the mission. A senior solar scientist at Isro's UR Rao Satellite Centre (URSC), is heading the centre's Space Astronomy Group (SAG) involved in developing scientific payloads for Aditya-L1, XPoSat, and the science payload onboard the Chandrayaan-3 propulsion module. "Sankarasubramanian has contributed to AstroSat, Chandrayaan-1 and Chandrayaan-2 missions of Isro in several capacities," Isro said, adding that he is also the principal investigator for one of the X-ray payloads onboard Aditya-L1 also heads the Aditya-L1 Science Working Group, which has members from several institutes of India engaged in solar science research.

<https://timesofindia.indiatimes.com/india/isro-confident-to-launch-maiden-sun-mission-early-next-year-chandrayaan-3-to-wait-till-mid-2023/articleshow/94997296.cms>

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