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समाचार पत्रों से चयित अंश Newspapers Clippings

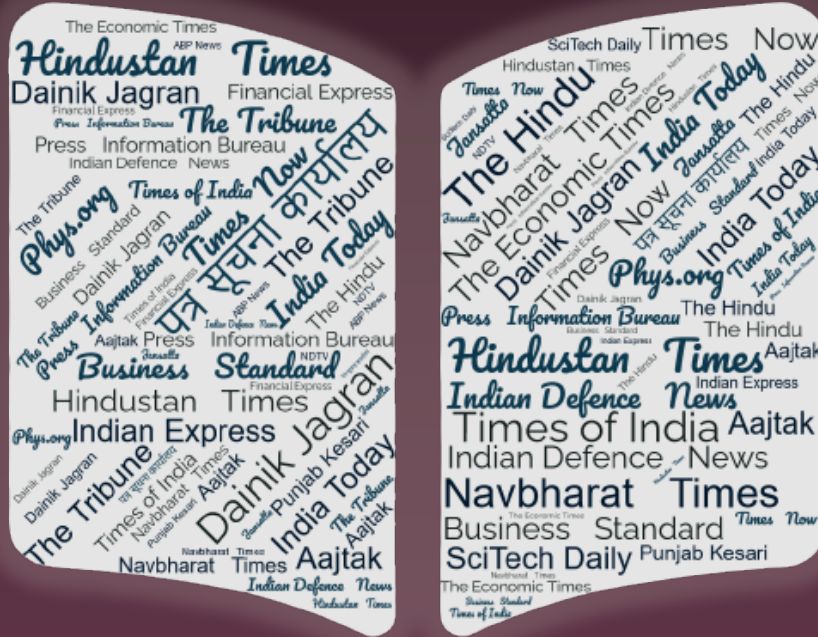
A Daily service to keep DRDO Fraternity abreast with DRDO
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DRDO News

DRDO Technology News

Business Standard

Wed, 19 Oct 2022

MGS, Light Tank, WhaP: DRDO presents 3 'Make in India' Successes at DefExpo

With the theme of “Aatmanirbhar Bharat” (self-reliant India) underpinning India’s premier defence exposition — DefExpo 22 — attention is focused on the India Pavilion and the sprawling presentation of the Defence Research and Development Organisation (DRDO). Prominent in the DRDO’s display are several artillery guns, armoured vehicles and tanks that underline a measure of success in developing these key weapons platforms for the army. Here are three systems that are headed for success.

Mounted Gun System (MGS)

There has long been attention on the 155 millimetre (mm), 52 calibre (cal) Advanced Towed Artillery Gun System (ATAGS), which the DRDO is developing in partnership with the Tata and Kalyani groups. Now, without fanfare, the DRDO has produced an offshoot of the ATAGS — called the 155 mm/52 cal Mounted Gun System (MGS) — which could become a battle winner that is central to the army’s firepower menu. The ATAGS is a conventional howitzer, which requires a wheeled tractor to tow it between firing positions. In the MGS, however, the entire gun is mounted onto a wheeled tractor, from where it can be fired without any dismounting or lengthy preparation. Bringing the MGS into action takes just 80 seconds, while bringing it out of action takes 85 seconds.

The MGS weighs 15 tonnes and the KolosTatra tractor on which it is mounted weighs another 15 tonnes. The total weight of 30 tonnes can comfortably negotiate the 40-tonne bridges on most highways. The MGS has a ready customer, since the Indian Army’s artillery plan stipulates the purchase of 814 MGSs to beef up artillery firepower. The DRDO wants the army to acquire MGS under the high-priority Chapter IV of the Defence Acquisition Procedure of 2020. This chapter gives the highest priority to: “Procedure for acquisition of systems designed and developed by DRDO/DPSU/OFB.”

The DRDO’s MGS faces competition from firms such as Bharat Forge and Tata Aerospace and Defence (A&D), which have also developed their own MGS. Only if the MoD categorises this acquisition in the Chapter IV category would the field be clear for the DRDO’s version.

However, the DRDO is confident about the superiority of its MGS. It has successfully cleared tests in deserts and high-altitude areas, displaying high accuracy and consistency. For when the enemy brings down counter fire, there is an armoured cabin (currently armour steel, to be developed into composite material) in which they can take shelter.

The light tank

The Chinese encroachment across the Line of Actual Control (LAC) into Indian-claimed territory in April 2020 galvanised the DRDO into resuming work on a much debated project: Development of a 25-tonne light tank that would be mobile enough for India's high mountain border areas, for jungle terrain, and for areas with narrow roads and bridges. While the DRDO completed its design work, the Directorate General of Armoured Corps (DGAC) finalised its Preliminary Staff Qualitative Requirements (PSQR), which detailed the precise specifications of the tank.

The DRDO was given the project in November 2021, with a deadline of three years. By November 2024, it is to finish trials and immediately begin delivery to the army. The tank's key component — the engine and transmission — are to be bought off-the-shelf. Under evaluation are engines from MTU of Germany, Caterpillar and Cummins of the US. Transmissions will be chosen from Renk of Germany and British firm Allison. Protection is modular, with bolt-on, retrofittable armour providing protection of STANAG level 4 in the tank's frontal 60-degree arc and STANAG 2 elsewhere. It will have a high-pressure tank gun (either 105 mm or 120 mm). According to DRDO sources, this effort is named Project Zorawar, after the legendary Sikh general who took his armies deep into Tibet.

Wheeled Armoured Platform (WhaP)

The DRDO has developed the WhaP as a basic platform for a family of mobile, protected multi-purpose vehicles, including a command post vehicle, a reconnaissance vehicle for a chemical, biological, radiological and nuclear (CBRN) battlefield, for amphibious reconnaissance, or even use as a light, armoured ambulance. It is to be 8x8 wheeled, not tracked, and weigh 19-27 tonnes. Up to a weight of 24.5 tonnes, it will be amphibious, i.e. capable of floating. With a hydrogas suspension, and a 600 HP Cummins engine coupled to an Allison transmission, the WhaP is to be highly mobile.

Protection is to be modular, with bolt-on, retrofittable panels that provide cover up to a level of STANAG 4. The floor can be reinforced to resist an improvised explosive device. Wish lists prepared for various United Nations missions have been recycled into the WhaP. The primary armament is to be a 30 mm cannon, mounted on a gun turret with an upgraded sighting system, which is being developed by the DRDO in partnership with Bharat Electronics Ltd. The DRDO has chosen Larsen & Toubro as a "design cum production partner". That means L&T is active in the design process.

https://wap.business-standard.com/article-amp/economy-policy/mgs-light-tank-whap-drdo-presents-3-make-in-india-successes-at-defexpo-122101901283_1.html

Wed, 19 Oct 2022

AMCA Critical Design to be Ready before Year End: DRDO

In the next few months the critical design of the much awaited next-generation Advanced Medium Combat Aircraft is expected to be completed before 2022 ends. Talking to media persons at the DefExpo 2022, at Gandhinagar, Gujarat, Project Director AK Ghosh, AMCA, Defence Research and Development Organisation (DRDO) said that the first prototype of the aircraft is expected to roll out in three years. And, the first flight of India's own AMCA is likely to take off in another year and a half. The Project Director of AMCA said that AMCA would be the first fifth generation aircraft which will go into the Indian inventory.

This will put India in the select group of countries in the world which have the capability to develop and design fifth generation fighter aircraft. According to Mr AK Ghosh, the design process has been completed and several validation tests have been done. And, currently the process of a Critical Design Review is going on. And once that process is completed successfully, the development process of the aircraft will start.

Special Features

Responding to media queries about the special features of the aircraft, he said "The generation of the aircraft is all dependent on the time it rolls out. And as the time progresses, new technologies and capabilities of the aircraft are enhanced." According to him as far as the fifth generation aircraft is concerned – it is the Stealth feature as this helps in reducing not only radar cross-sections but also other signatures. And this is one of the design drivers. The designing of the AMCA airframe has taken this into consideration, unlike the fourth generation airframe design was not done like this. And with the coming in of the fifth generation aircraft certain concepts have been integrated with the concepts that have already been developed. And the AMCA that is getting ready for the Indian Air Force (IAF) is more advanced compared to the 4.5 generation aircraft. This aircraft is going to be manufactured through a Special Purpose Vehicle (SPV) which is formed between state owned Hindustan Aeronautics Limited (HAL), DRDO and private players. The AMCA project is in line with Prime Minister Narendra Modi's vision of Aatmanirbhar Bharat, and is being jointly developed, and designed by state-owned Hindustan Aeronautics Limited (HAL), and Aeronautical Development Agency (ADA), DRDO. This project, as reported earlier this year is expected to give a boost to the Aerospace and Defence industry of India. In March the process of getting design and prototype development the Cabinet Committee on Security (CCS) gave its approval.

SPV

The idea of setting up a SPV was initiated in 2020 when the configuration was frozen following the preliminary Design Review (PDR) in the month of December that year. So far, IAF has committed to 40 AMCA Mk-1 fighters, and around 100 LCA Mk-2 variants, and also some units of the unmanned variant.

<https://www.financialexpress.com/defence/amca-critical-design-to-be-ready-before-year-end-drdo/2720163/lite/>

Wed, 19 Oct 2022

HAL Receives DcPP Certificate From DRDO

Hindustan Aeronautics Limited (HAL) received a Development cum Production Partner (DcPP)/ Production Agency (PA) certificate for ABHYAS - High-Speed Expendable Aerial Target (HEAT) System from DRDO at a programme held on the sidelines of DefExpo 2022. Mr C B Ananthakrishnan, CMD, HAL received the certificate from Dr. Samir V Kamat, Secretary, Department of Defence R&D and Chairman, DRDO. The Aircraft Division of HAL is the first DcPP/PA identified organization under ADE-DRDO's new scheme for procurement of complex system.

HAL formally handed-over the first batch of two units of High-speed Expendable Aerial Target (HEAT) System ABHYAS to Aeronautical Development Establishment (ADE) recently. The successful completion of this first batch order has enabled HAL to become a Development cum Production Partner (DcPP)/ Production Agency (PA) for bulk supply of this target Aircraft and explore potential export opportunities giving a significant boost to "Make in India" initiative for the defence supplies.

ABHYAS is designed & developed by ADE, Bengaluru, and DRDO as an indigenous target aircraft. ABHYAS is launched with the help of a booster, which falls after the boost phase. The flight continues with a small gas turbine engine at subsonic speed. ABHYAS is programmed for fully autonomous flight, equipped with an Inertial Navigation System (INS) for navigation and a Flight Control Computer (FCC) for guidance and control. With more than 80% indigenous content, ABHYAS is a leap step towards "Atmanirbhar Bharat" in defence technologies.

<https://www.psuconnect.in/news/hal-receives-dcpp-certificate-from-drdo/34831>



Wed, 19 Oct 2022

Explained: EM Railgun Technology that the ARDE (DRDO) has Successfully Developed

As part of one of its recent achievements, ARDE (DRDO) has succeeded in building a 10MJ (megajoules) EM Railgun. Its ongoing development of up to 100 MJ will occur at a specialized infrastructure facility called 'CEMaLT,' now under construction.

Know about the latest development

A railgun based on a 10 MJ power system has been successfully conceived, constructed, and installed at ARDE, Pune, employing programmable pulsed power technology. Using this facility, hypervelocity propulsion of more than 2000 m/s has been accomplished. A series of dynamic firing experiments from a stable firing stand was carried out with the 10 MJ EM railgun for

experimental assessment and system performance. These studies aided in characterizing the EM railgun with bore diameters ranging from 12 mm to 45 mm and projectile weights of 80 gm, 120 gm, 250 gm, and 500 gm.

The configuration and design techniques may be expanded to achieve increased speed, range, and lethality in futuristic rail guns based on the technical expertise obtained following the successful completion of the Technology Demonstration (TD) project. A specially designed C-shaped armature has been used to complete the high current path with the rails. The C-shaped armature also carries the projectile. There are up to 1 kg projectiles that have been fired from the 45 mm EM railgun, and some of the projectiles are tried at the laboratory.

Since the railgun is subjected to strong repulsive pressures, a containment structure with minimal rail deflection has been constructed. The rails are also tested to cause harm by moving the armature along its exterior. Railguns with bores up to 45 mm have been created in a laboratory.

What are Railguns?

Railguns are being developed as weapons that would not require explosives or propellants but would instead depend on electromagnetic forces to transmit extremely high amounts of kinetic energy to a projectile. Its additional benefits include the lack of explosive propellants or warheads to manage and stockpile, as well as the inexpensive budget of projectiles compared to traditional armament.

In the military realm, weights ranging from 0.1 kg to several kilograms must be accelerated to speeds ranging from 2 km/s to 3 km/s. Hence, railguns have been shown in trials to accelerate weights of several kilos to speeds over 2 km/s. They are appealing accelerators for military payloads because they can attain speeds that explosively propelled guns do not.

What are the gun propulsion techniques in conventional weapons?

The railguns work as the propellant heating in the gun chamber causes the projectile to accelerate in a typical gun barrel. However, only a certain quantity of propellant may be loaded into a gun's chamber. A bigger chamber capacity is required by a cannon to accommodate a greater amount of propellant, resulting in a pressure drop. The tremendous velocity at which the gasses may accelerate projectiles is influenced by the frequency of noise in the gas.

The latest technique, Electromagnetic (EM) propulsion, is being investigated as the EM energy generated by the Lorentz force is employed to drive a projectile. Unlike gasses in chemical energy-based propulsion, this propulsion system has no theoretical limit on medium velocity since electromagnetic waves travel at the speed of light.

What are the problems with the Railgun?

The project requires enormous amounts of power to fire and shreds itself apart with usage. It is undoubtedly an advanced technology model, but it is arguably uneconomical. Besides, India isn't the only country working on railguns. Prototypes have been tested in the United States, Russia, China, and Turkey.

<https://www.indiatimes.com/explainers/news/em-railgun-technology-that-the-arde-drdo-has-successfully-developed-582244.html>



बुधवार, 19 अक्टूबर 2022

स्वदेशी पिस्तौल और कार्बाइन जो क्लोज कॉम्बैट में सबसे ज्यादा कारगर, जानिए इनकी ताकत

नजदीकी जंग के समय यानी क्लोज कॉम्बैट के वक्त छोटे, घातक और हल्के हथियारों का इस्तेमाल होता है. बड़ी राइफलों या बंदूकों से काम नहीं चलता. पहले हम आपको बताते हैं डीआरडीओ के आर्मामेंट रिसर्च एंड डेवलपमेंट इस्टैबलिशमेंट और आर्मी इन्फैंट्री स्कूल, महु द्वाारा मिलकर बनाई गई मशीन पिस्टल अस्मि (ASMI) के बारे में. अस्मि एक संस्कृत शब्द है, जिसका मतलब है गर्व, आत्मसम्मान और कड़ी मेहनत. अस्मि (ASMI) को बनाने में डीआरडीओ को सिर्फ 4 महीने लगे हैं. इसके दो वैरिएंट्स हैं. 9 मिलिमीटर कैलिबर वाली इस मशीन पिस्टल का वजन सिर्फ 1.80 KG है. इसके ऊपर किसी भी तरह के टेलिस्कोप, बाइनोक्यूलर या बीम लगाए जा सकते हैं. इस पिस्टल को एल्यूमिनियम और कार्बन फाइबर से बनाया गया है. इसकी सटीक रेंज 100 मीटर है. मैगजीन में स्टील लाइनिंग होने की वजह से ये फंसैंगी नहीं.

अस्मि मशीन पिस्टल की मैगजीन को पूरा लोड करने पर 33 गोलियां आती हैं. यह पिस्टल एक मिनट में 600 गोलियां दाग सकती है. इसका लोडिंग स्विच दोनों तरफ हैं. यानी दोनों हाथों से ये पिस्टल चलाना आसान होगा. इसकी लंबाई 14 इंच है. बट खोलने पर यह बढ़कर 24 इंच हो जाती है

इसके बाद आती है मॉडर्न सब मशीन कार्बाइन (Modern Sub Machine Carbine - MSMC). इसे DRDO के एडवांस्ड वेपन एंड इक्विपमेंट इंडिया लिमिटेड ने बनाया है. इसका वजन सिर्फ 2.8 किलोग्राम है. हल्की होने की वजह से इसे जवान काफी पसंद करते हैं. बंद बट के साथ इसकी लंबाई 21.7 इंच है, जबकि खोलकर 29.3 इंच. इसकी बैरल की लंबाई 12 इंच है. इसमें 5.56x30 mm MINSAS कार्टिरेज लगती हैं. यह कार्बाइन गैस ऑपरेटेड, लॉन्ग स्ट्रोक पिस्टन रोटेटिंग बोल्ट सिस्टम पर काम करती है. यह एक मिनट अधिकतम 900 राउंड फायर कर सकती है.

MSMC की रेंज 200 से 300 मीटर है. 30 राउंड का बॉक्स मैगजीन लगता है. इसमें आप ऑयरन साइट, रिफ्लेक्स साइट्स, इन्फ्रारेड साइट्स या लेजर साइट्स लगा सकते हैं इसमें आप ऑयरन साइट, रिफ्लेक्स साइट्स, इन्फ्रारेड साइट्स या लेजर साइट्स लगा सकते हैं. भारतीय सेना के लिए इसके ट्रायल्स 2021 में पूरे हुए हैं. इसके ट्रायल्स 2021 में पूरे हुए हैं. इसके ट्रायल्स अत्यधिक गर्मी और सर्दी वाले हिमालयी

इलाकों में किए गए हैं. फिलहाल इस मशीन कार्बाइन का उपयोग CISF, CAPF, छत्तीसगढ़ पुलिस, स्पेशल प्रोटेक्शन ग्रुप यानी SPG कर रही है.

<https://www.aajtak.in/india/news/story/asmi-machine-pistol-of-indian-army-at-defence-expo-istrd-1559082-2022-10-19>

नवभारत टाइम्स

गुरुवार, 20 अक्टूबर 2022

ज्यादा घातक होगा तेजस का नया अवतार दो साल में पहली उड़ान भरेगा, 2030 तक सेवा में आने की उम्मीद

■ **गांधीनगर :** भारत में दुनिया का सबसे खतरनाक हल्का लड़ाकू विमान (एलसीए) बनाने का काम चल रहा है। यह मौजूदा एलसीए तेजस का नया अवतार होगा। तेजस, LCA मार्क-1 है। इसके बाद LCA- मार्क1ए आया, जिसमें मार्क-1 के मुकाबले कुछ बदलाव किए गए। अब रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) LCA-मार्क-2 को विकसित कर रहा है। इसमें दुनिया में मौजूद किसी भी हल्के लड़ाकू विमान के मुकाबले ज्यादा हथियार ले जाए जा सकेंगे। साथ ही इसमें 8 से लेकर 10 तक ऐसी मिसाइलें ले जाई जा सकेंगी जो बहुत ही दूर तक मार कर सकती हैं। ऐसी मिसाइलों को बियॉन्ड विजुअल रेंज मिसाइल (बीवीआर) कहा जाता है। खास बात यह है कि अब तक किसी भी हल्के

नए तेजस विमान में स्वदेशी कंटेन भी पहले के मुकाबले ज्यादा होगा। राव ने कहा कि इस मार्क-2 में 90 परसेंट कंटेन स्वदेशी होगा। इसका इंजन भी भारत में ही बनेगा। इसके लिए जीई एविएशन के साथ एमओयू साइन किया गया है। जीई एविएशन अमेरिका की कंपनी है, लेकिन इंजन भारत में ही बनाया जाएगा।

लड़ाकू विमान में चार से ज्यादा बीवीआर मिसाइल ले जाने की क्षमता नहीं है। इस मायने में नया तेजस एलसीए मार्क 2 ज्यादा मिसाइल ले जा पाने के कारण दुश्मन के लिए कहीं ज्यादा घातक होगा।

देश में ही बनेगा : भारतीय वायुसेना के लिए LCA-मार्क-2 को डीआरडीओ विकसित कर रहा है। विकसित कर लिए जाने के बाद इसे बनाने का काम हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल)

जन भी देश में बनेगा



करेगा। ये हल्के लड़ाकू विमान वायुसेना में घटते लड़ाकू विमानों के जखीरे की जगह भरेंगे। साल 2024 तक वायुसेना की मिग-21 की तीन स्क्वाड्रन सेवा से बाहर हो जाएंगी। जगुआर की छह स्क्वाड्रन हैं। ये 2025 से सेवा से बाहर की जाने लगेगी। वहीं 2032 तक जगुआर की सभी स्क्वाड्रन बाहर कर दी जाएंगी।

2024 तक पहली उड़ान : LCA-मार्क-2 के प्रॉजेक्ट डायरेक्टर मधुसूदन

राव ने बताया कि इसका पहला प्रोटोटाइप दिसंबर 2023 तक तैयार हो जाएगा। अभी के तय लक्ष्य के मुताबिक, ये अपनी पहली उड़ान दिसंबर 2024 तक भर लेगा। इस दशक के अंत तक यानी 2030 तक दुनिया के ये सबसे खतरनाक हल्के लड़ाकू विमान वायुसेना में शामिल हो जाएंगे।

11 हथियार ले जा सकेगा : नया तेजस 6.5 टन वजनी हथियार ले जा सकेगा। इसमें 11 हार्ड पॉइंट्स होंगे। हार्ड पॉइंट्स का मतलब हथियार ले जाने के पॉइंट्स से है। इससे पहले के मार्क-1 में 7 हार्ड पॉइंट ही थे। मधुसूदन राव ने बताया कि फ्रांस, रूस से लिए हथियार के साथ ही भारत में बने हथियार भी इसमें ले जाए जा सकते हैं। इसके विंग्स में दो मिसाइलें लग सकती हैं। पहली बार हल्के लड़ाकू विमान में ऐसा होगा। युद्ध की स्थिति में LCA-मार्क-2 सभी मिसाइल के साथ आधे घंटे में उड़ान भरने के लिए तैयार हो जाएगा।

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#DRDOUpdates | Day 1 highlights of #DRDO activities at #DefExpo2022

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#DRDOUpdates | Highlights from the #DefExpo22, where we witnessed a variety of experiences including dignitary visits to #DRDO

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Defence News

DefExpo 2022 News



Press Information Bureau
Government of India

Ministry of Defence

Wed, 19 Oct 2022 12:34 PM

Prime Minister Shri Narendra Modi Inaugurates DefExpo22 in Gandhinagar, Gujarat

Unveils HTT-40 indigenous trainer aircraft designed by Hindustan Aeronautics Limited; Launches Mission DefSpace & lays foundation stone of Deesa airfield DefExpo is a symbol of global trust towards India: PM
“‘New India’ is moving ahead with the mantra of Intent, Innovation & Implementation in defence sector” We have set a target to reach Rs 40,000 crore worth of defence exports in the coming times: PM
Raksha Mantri Shri Rajnath Singh describes ‘Path to Pride’ as a new objective of a strong & self-reliant ‘New India’
“Massive DefExpo participation shows renewed confidence of domestic & global business community in India’s emerging business potential”
National security has always been our top priority; We are expanding defence capabilities through Under Water Domain Awareness & Aero-Space force:
RM

Prime Minister Shri Narendra Modi inaugurated DefExpo 2022 at Mahatma Mandir Convention and Exhibition Centre in Gandhinagar, Gujarat on October 19, 2022. At the India Pavilion, the Prime Minister also unveiled HTT-40 - the indigenous trainer aircraft designed by Hindustan Aeronautics Limited. The aircraft has state-of-the-art contemporary systems and has been designed with pilot-friendly features. The Prime Minister also launched Mission DefSpace to develop innovative solutions for the Armed Forces in the space domain through industry and start-ups. He also laid the foundation stone of the Deesa airfield in Gujarat.

Addressing the gathering, the Prime Minister welcomed the delegates to an event of a capable and ‘Aatmanirbhar Bharat’ both as a Prime Minister and as a son of Gujarat. Remarking on the organisation of the DefExpo 2022, the Prime Minister said it paints a picture of ‘New India’ and

its capabilities whose resolve is being forged at the time of AmritKaal. He added that it is an amalgamation of the country's development as well as states' cooperation. "It has the power and dreams of the youth, it has the resolve and capabilities of the youth. It has hopes for the world and opportunities for friendly nations," the Prime Minister said.

Underlining the uniqueness of this edition of DefExpo, the Prime Minister said "this is the first defence expo where only Indian companies are participating and it features only Made in India equipment". He announced "From the land of Iron Man, Sardar Patel, we are setting an example of the capabilities of India before the world. The Expo has more than 1,300 exhibitors which include the India Defence Industry, some joint ventures associated with Indian Defence Industry, MSMEs and more than 100 start-ups. The Prime Minister remarked that it provides a glimpse of the capability and possibility of India in one single frame. He further informed that more than 400 MoUs are being signed for the first time ever.

Noting the positive response from various countries, the Prime Minister expressed happiness that when India is giving shape to its dreams, 53 friendly countries from Africa are walking with us. The second India-Africa Defence Dialogue will also take place on this occasion, the Prime Minister informed. "This relationship between India and Africa is based on time-tested trust that is further deepening and touching new dimensions with the passing of time", the Prime Minister added. Dwelling upon the old ties between Africa and Gujarat, the Prime Minister recalled that the first railway lines in Africa had the participation of people from Kutch. Many words used in daily life in Africa have their origin in the Gujarati community in Africa. "Even for a global leader like Mahatma Gandhi, if Gujarat was his birthplace, then Africa was his first 'Karmbhoomi'. This affinity for Africa is still central to India's foreign policy. During the Corona period, when the whole world was worried about the vaccine, India delivered the vaccine giving priority to our friendly countries in Africa," he said.

The 2nd Indian Ocean Region plus (IOR+) conclave will also be held during the Expo, which will provide a stage for a comprehensive dialogue to promote defence cooperation amongst IOR+ nations to foster peace, growth, stability and prosperity, in line with the Prime Minister's vision for Security and Growth for All in the Region (SAGAR). The Prime Minister said, "Today, from international security to global trade, maritime security has emerged as a global priority. The role of the merchant navy has also expanded in the era of globalisation." He continued, "The world's expectations from India have increased, and I assure the world community that India will fulfil them. Therefore, this Defense Expo is also a symbol of global trust towards India"

The Prime Minister acknowledged Gujarat's identity with regard to development and industrial capabilities. "This Defence Expo is giving a new height to this identity", he said. He further added that Gujarat will emerge as a major centre of the defence industry in the coming days.

The Prime Minister, who also laid the foundation stone of the Deesa airfield in Gujarat, said that the forward airforce base will add to the security architecture of the country. Noting Deesa's proximity with the border, the Prime Minister said that now India is better prepared to respond to any misadventure on the western borders. "After coming to the government, we decided to set up an operational base in Deesa, and this expectation of our forces is being fulfilled today. This region will now become an effective centre of security of the country", ShriModi added 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.” ‘Mission Defence Space’, he continued, will not only encourage innovation and strengthen the forces but also provide new and innovative solutions.

The Prime Minister highlighted that space technology is shaping new definitions of India's generous space diplomacy, giving rise to new possibilities. “Many African countries and many other small countries are benefiting from this”, he added. The Prime Minister informed that there are more than 60 developing countries with whom India is sharing its space science. “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.

In the defence sector, the Prime Minister said, new India is moving ahead with the mantra of Intent, Innovation and Implementation. Till 8 years ago, India was recognised as the world's largest defence importer. But New India showed intent, showed willpower and 'Make in India' is becoming a success story in the defence sector today. “Our defence exports have grown eight times in the last five years. We are exporting defence materials and equipment to more than 75 countries of the world. In 2021-22 Defence exports from India reached \$1.59 billion *i.e.*, about Rs 13,000 crore. And in the coming time, we have set a target to reach \$5 billion *i.e.*, Rs 40,000 crore,” he added.

The world is relying on India's technology today because India's armies have proved their capabilities. The Indian Navy has inducted state-of-the-art aircraft carriers like the INS-Vikrant into its fleet. This engineering giant and colossal masterpiece has been made by Cochin Shipyard Limited with indigenous technology. ‘The induction of the ‘Prachand’ Light Combat Helicopters developed under the ‘Make in India’ initiative by Indian Air Force is a clear example of India’s defence capability, he said.

Throwing light on making India's defence sector self-reliant, the Prime Minister highlighted that the armies have also finalised two lists of equipment which would be procured only within the country. This list of 101 such items is being released today. These decisions also show the potential of a self-reliant India. After the list, there will be 411 such equipment and equipment of the defence sector, which will only be bought under the “Make in India’. The Prime Minister informed that such a huge budget will strengthen the foundation of Indian companies and take them to new heights. He further added that it will be the youth of the nation that will benefit the most from it.

The Prime Minister highlighted that reliable options are now mushrooming to replace the monopoly that few companies have created in the field of defence supply. “The youth of India has shown the power to break this monopoly in the defence industry and this effort of our youth is for the global good.”, Shri Modi said. He underlined that the small countries of the world who are left behind in their security due to lack of resources will now reap great benefits from this. The Prime Minister underlined, “India sees the defence sector as an infinite sky of opportunities, as positive possibilities.” Speaking on investment opportunities in the defence sector, the Prime Minister informed that India is building two defence corridors in UP and Tamil Nadu and many big companies of the world are coming to invest in India. He also highlighted the might of

the MSMEs in the sector and informed that these big companies will be supported by our MSMEs while creating a large network of supply chains behind this investment. “Investments of such scale in this sector will generate huge employment opportunities for the youth in those areas which were not even thought of earlier”, the Prime Minister added. The Prime Minister called

upon all the companies present at the DefExpo and urged them to give shape to these opportunities keeping the India of the future at the centre. “You innovate, take a pledge to be the best in the world, and give shape to the dream of a strong developed India. You will always find me there supporting you”, he concluded.

In his address, RakshaMantriShriRajnath Singh described ‘Path to Pride’ as not just a theme of DefExpo 2022, but also a new objective of a ‘New India’ which is strong and ‘Aatmanirbhar’. He asserted that the conduct of DefExpo 2022 at the beginning of ‘AmritKal’ reflects the Government’s strong resolve to protect the nation from all threats and transform India into a global defence manufacturing hub in the next 25 years. “DefExpo is a symbol of an aspirational and self-reliant India. It is a symbol of the pride, power and resolve of India,” he said.

The RakshaMantri stated that under the dynamic leadership of Prime Minister ShriNarendraModi, the Indian defence sector is continuously marching on the path of national pride with full dedication. He termed the massive participation of over 1,300 Indian exhibitors along with their latest technologies, besides Defence Ministers, Service Chiefs and officials from more than 80 countries in DefExpo 2022 as a testament to a renewed confidence of the domestic and global business community in India’s emerging business potential. He added that during the bilateral meetings at DefExpo and before, many countries have shown interest in the defence equipment/technologies/training systems being made in India, which reflects the growth of the defence sector.

Pointing out that the changing scenario of the Indian defence industry is providing new opportunities to the private sector, ShriRajnath Singh said, today big industrial houses are competing for defence projects and are ready to make large investments. He highlighted the equal emphasis being laid by the Government on Micro, Small and Medium Enterprises (MSMEs), stating that special incentives are being provided which have encouraged the participation of these enterprises in the defence sector.

Terming research & development as another important area, the RakshaMantri said, the Government is focussing on R&D funding in frontier technologies and promoting public-private partnership to achieve technological leadership in defence production. Technological Development Fund and Innovations for Defence Excellence (iDEX) initiative are steps in that direction, he said.

ShriRajnath Singh emphasised that national security has always been accorded top priority by the Government, adding that “land, water and sky are already witness to the valour of our military, but now we are expanding our defence capabilities by reaching the depths of the ocean in the form of Under Water Domain Awareness and heights of space as Aero-Space force”. Mission Def-Space, launched by the Prime Minister, is a major milestone in that direction, he said. Under Mission Def-Space, 75 challenges are being opened to get innovative solutions, based on the defence requirements in the space domain.

Gujarat Chief Minister ShriBhupendrabhai Patel, Governor of Gujarat ShriAcharyaDevvrat, Chief of Defence Staff General Anil Chauhan, Chief of Air Staff Air Chief Marshal VR Chaudhari, Chief of Naval Staff Admiral R Hari Kumar, Chief of Army Staff General ManojPande and Defence Secretary Dr Ajay Kumar were among those present on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869117>

Wed, 19 Oct 2022

PM Modi Inaugurates 12th Edition of Defence Expo in Gandhinagar, Gujarat

Prime Minister Narendra Modi inaugurated the Defence Expo 2022 at Gandhinagar on October 19. This is the 12th edition of the event that has been organised on the theme 'Path to Pride'. With an aim to give impetus to the defence sector, India's biggest ever defence exhibition - DefExpo 2022 - is being held in Gandhinagar, Gujarat. Modi laid the foundation stone of 52 Wing Air Force Station Deesa at the inauguration ceremony of the Def Expo 2022. Modi said, "Defence Expo 2022 is displaying a grand picture of the New India, the resolution for which was taken by us during AmritKaal. It has the nation's development, states' participation, youth power, young dreams, young courage and youth's capabilities." This year's DefExpo is the first-ever edition for Indian companies. The DefExpo also marks the celebration of one year of the formation of the seven new defence companies, carved out of the erstwhile Ordnance Factory Board. The Indian Pavillion - a marque pavillion of the Department of Defence Production - will showcase the maturity of indigenous defence products in defence while presenting India's vision for 2047.

<https://www.moneycontrol.com/news/photos/india/defexpo-2022-pm-modi-inaugurates-12th-edition-of-defence-expo-in-gandhinagar-gujarat-9354461.html>

Business Standard

Wed, 19 Oct 2022

PM Modi Inaugurates Defence Expo, Lays Foundation of Deesa Airfield

Prime Minister Narendra Modi inaugurated the defence expo, DefExpo 2022, at the Mahatma Mandir Convention and Exhibition Centre in Gujarat's Gandhinagar. Apart from launching the Mission DefSpace, and laying foundation of the Deesa airfield, PM Modi also unveiled the HTT-40 indigenous trainer aircraft designed by Hindustan Aeronautics Limited. He said that the defence expo is a symbol of the global trust in India. "This is the first defence expo where only Indian companies are participating and it features only Made in India equipment," he added. PM Modi said that DefExpo 2022 paints a picture of "New India" and its capabilities. The expo has more than 1,300 exhibitors, including India Defence Industry, joint ventures associated with Indian Defence Industry, MSMEs and more than 100 startups. PM Modi added that more than 400 MoUs are being signed at the expo.

The expo is being attended by 53 friendly countries from Africa. The second India-Africa Defence Dialogue, and the 2nd Indian Ocean Region+ (IOR+) Conclave. The Indian Ocean Region conclave will provide a stage to promote defence cooperation between these nations and foster peace, growth, stability and prosperity. PM Modi also acknowledged Gujarat's identity with regard to development and industrial capabilities, and that the state will emerge as a major

centre of the defence industry in the coming days. While laying the foundation stone of the Deesa airfield, PM Modi said that the airforce base will add to the security architecture of the country. As Deesa is close to the border, PM Modi said that India will now be better prepared to respond to any misadventure on the western borders. "This region will now become an effective centre of security of the country," he said.

Speaking about the defence sector, PM Modi said that India is moving ahead with the mantra of "intent, innovation and implementation". India was the largest importer till eight years ago but things have changed now. Now defence exports have grown eight times in the last five years. "We are exporting defence materials and equipment to more than 75 countries of the world. In 2021-22 defence exports from India reached \$1.59 billion i.e. about Rs 13,000 crore. And in the coming time, we have set a target to reach \$5 billion i.e. Rs 40,000 crore," he added. Highlighting India's increasing self-reliance, the prime minister said that the defence forces have finalised two lists of equipment that would be procured only within the country. These lists consist of 101 items.

"India sees the defence sector as an infinite sky of opportunities, as positive possibilities," said PM Modi, adding that India is building two defence corridors in UP and Tamil Nadu. He also said that big global companies investing in India will be supported by MSMEs while creating a large network of supply chains behind this investment. "Investments of such scale in this sector will generate huge employment opportunities for the youth in those areas which were not even thought of earlier," the Prime Minister added, calling upon companies present at the expo to give shape to these opportunities. Apart from PM Modi, Chief Minister of Gujarat Bhupendra Patel, Governor of Gujarat Acharya Devvrat, Union Minister of Defence Rajnath Singh, Chief of Defence Staff General Anil Chauhan, Chief of Army Staff, General Manoj Pande, Chief of Air Staff Air Chief Marshal V R Chaudhari, Chief of Naval Staff, Admiral R Hari Kumar, and Defence Secretary to Government of India, Dr Ajay Kumar were those present at the event.

<https://www.businesstoday.in/latest/economy/story/defexpo-2022-pm-modi-inaugurates-defence-expo-lays-foundation-of-deesa-airfield-350283-2022-10-19>

Business Standard

Wed, 19 Oct 2022

New Airbase Coming up in Gujarat Near Indo-Pak Border: PM Modi at DefExpo

Prime Minister Narendra Modi on Wednesday laid the foundation stone of a new airbase coming up in north Gujarat near India-Pakistan border and said it will emerge as an effective centre for the country's security. Speaking after inaugurating the Defence Expo 2022 in Gujarat capital Gandhinagar, Modi also said that defence forces will release a list of 101 more items that cannot be imported. With this 411 defence-related goods can only be procured locally, he said. "This will give a major boost to the Indian defence industry, he said. The PM said this is an unprecedented DefExpo as only Indian companies are participating in it for the first time.

He said the air base coming up at Deesa in Banaskantha in North Gujarat will "emerge as an effective centre for the security of the country. He also said that the exports of Indian defence

products have increased eight times in the last few years. The country has come a long way, as "earlier we used to release pigeons and now we release cheetahs", he added.

https://www.business-standard.com/article/current-affairs/new-airbase-coming-up-in-gujarat-near-indo-pak-border-pm-modi-at-defexpo-122101900355_1.html



Press Information Bureau
Government of India

Ministry of Defence

Wed, 19 Oct 2022 11:06 AM

‘Aatmanirbharta’ in Defence: Prime Minister Shri Narendra Modi announces Fourth Positive Indigenisation List of 101 Items during DefExpo 2022

One of the key constituents of Government’s ‘Aatmanirbhar Bharat Abhiyan’ is to transform the defence sector to achieve self-reliance and boost the export of Defence items with active participation of public and private sector. Ministry of Defence (MoD) has taken numerous steps to achieve ‘Aatmanirbharta’ in defence and Positive Indigenisation Lists is one of the landmark initiatives towards achieving that vision. The MoD had earlier promulgated 'First, Second and Third Positive Indigenisation Lists', comprising 310 items on August 21, 2020, May 31, 2021 and April 07, 2022 respectively. The ‘Fourth Positive Indigenisation List’ of 101 items was announced by Prime Minister Shri Narendra Modi during the opening ceremony of DefExpo 2022 in Gandhinagar, Gujarat on October 19, 2022.

All the items included in the lists will be procured from indigenous sources as per provisions given in Defence Acquisition Procedure (DAP) 2020. This list provides continuous impetus towards self-reliance in defence. The Prime Minister, during his address to the nation from the ramparts of the Red Fort on the occasion of 76th Independence Day, had appreciated the efforts taken for indigenisation through the Positive Lists. These lists would boost indigenisation and achieve ‘Aatmanirbharta’ in the defence sector and increase exports in the coming times.

The fourth list has been prepared by MoD after several rounds of consultations with all stakeholders, including the industry. It lays special focus on equipment/systems, which are being developed and likely to translate into firm orders in the next five to ten years. Like the first three lists, import substitution of ammunition which is a recurring requirement has been given special focus. This fourth list recognises the growing capacity and capabilities of the Indian defence industry and is likely to stimulate the potential of domestic research & development by attracting fresh investment into technology and manufacturing capabilities. The items listed in the fourth list will provide ample visibility and opportunity to the domestic defence industry for understanding the trend and futuristic needs of the Armed Forces and create requisite R&D and manufacturing capacity within the country.

The MoD will facilitate a conducive environment and render all possible support to the industry to ensure that the timelines mentioned in the ‘Fourth Positive Indigenisation List’ are met,

thereby achieving self-reliance in defence and developing the capabilities for exports within the country in a time-bound manner. The list has been hosted on the MoD website (www.mod.gov.in) for information of all stakeholders.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869080>

Business Standard

Wed, 19 Oct 2022

PM Modi Announces 4th 'Positive Indigenisation List' of 101 Defence Items

With the aim of achieving self-reliance and boosting exports in the defence sector, Prime Minister Narendra Modi on Wednesday announced the 'Fourth Positive Indigenisation List' of 101 items during the opening ceremony of DefExpo 2022 in Gandhinagar, Gujarat. All the items included in the lists will be procured from indigenous sources as per provisions given in Defence Acquisition Procedure (DAP) 2020. This list provides continuous impetus towards self-reliance in defence. According to the Ministry of Defence (MoD), the 'Positive Indigenisation List' is one of the landmark initiatives towards achieving self-reliance in defence sector. The MoD had earlier promulgated 'First, Second and Third Positive Indigenisation Lists', comprising 310 items on August 21, 2020, May 31, 2021 and April 07, 2022 respectively.

The 'Fourth Positive Indigenisation List' of 101 items was announced by Prime Minister Narendra Modi today. These lists would boost indigenisation and achieve 'Aatmanirbharta' in the defence sector and increase exports in the coming times, said the MoD statement. The fourth list has been prepared by MoD after several rounds of consultations with all stakeholders, including the industry. It lays special focus on equipment/systems, which are being developed and likely to translate into firm orders in the next five to ten years. Like the first three lists, import substitution of ammunition which is a recurring requirement has been given special focus.

The MoD statement said this fourth list recognises the growing capacity and capabilities of the Indian defence industry and is likely to stimulate the potential of domestic research and development by attracting fresh investment into technology and manufacturing capabilities. The items listed in the fourth list will provide ample visibility and opportunity to the domestic defence industry for understanding the trend and futuristic needs of the Armed Forces and create requisite research and development and manufacturing capacity within the country. The MoD will facilitate a conducive environment and render all possible support to the industry to ensure that the timelines mentioned in the 'Fourth Positive Indigenisation List' are met, thereby achieving self-reliance in defence and developing the capabilities for exports within the country in a time-bound manner, added the Defence Ministry statement.

https://www.business-standard.com/article/current-affairs/pm-modi-announces-4th-positive-indigenisation-list-of-101-defence-items-122101900444_1.html

Decision of Defence Forces to Buy Most of Country-Made Equipment Shows Capacity of 'Atmanirbhar Bharat': PM Modi

Prime Minister Narendra Modi on Wednesday said the decision of the Indian defence forces to buy a majority of the equipment made in the country shows the capacity of the 'Atmanirbhar Bharat' (self-reliant India). India has made its place despite the monopoly of a few manufacturing companies in the defence sector globally, he said. This also symbolises the rising confidence on defence materials made in India, he said after inaugurating the Defence Expo 2022, which is aimed at showcasing the country's defence manufacturing capabilities. The defence exports from India reached about Rs 13,000 crore in 2021-22 and "we have set a target to reach Rs 40,000 crore in the coming times," he said.

At the event, Modi also laid the foundation stone for a new airbase at Deesa in Banaskantha district of north Gujarat near the India-Pakistan border and said it will emerge as an effective centre for the country's security. "The country has come a long way as earlier we used to release pigeons and now we release cheetahs," he said. The PM also laid emphasis on the importance of maritime security and space technology. The maritime security has emerged as a global priority, he said. India will also have to increase its preparations looking at the future opportunities in the space sector, he said. On the issue of maritime security, Modi talked about his vision of the 'Security and Growth for All in the Region' (SAGAR).

India's engagement in the Indo-Pacific region is inclusive, he said. "Today, from international security to global trade, maritime security has emerged as a global priority. The role of the merchant navy has also expanded in the era of globalisation," he said. "The world's expectations from India have increased, and I assure the world community that India will fulfil them. Therefore, this Defence Expo is also a symbol of global trust towards India," he said. Modi also talked about India's relationship with Africa and said it is based on the "time-tested trust which is further deepening and touching new dimensions with the passage of time." Dwelling upon the old ties between Africa and Gujarat, he recalled that the first railway line in Africa had the participation of people from Kutch. Modi said the defence forces will on Wednesday release a list of 101 more items that can only be procured in India. With this, 411 defence-related goods can only be procured locally, he said.

"This will give a major boost to the Indian defence industry," he said, adding that these decisions also show the potential of a self-reliant India. He said the exports of Indian defence products have increased eight times in the last few years. "The world is trusting Indian technology because the our armed forces have proved their capabilities. We are exporting defence materials and equipment to more than 75 countries," the PM said. "Our policies, reforms and the ease of doing business have played a big role in reaching this point. India has earmarked 68 per cent of its defence budget for Indian companies. It's a big decision, and has been made possible because of the progressive leadership of the Indian Armed Forces," he said. The PM said the decision of

the Indian defence forces to buy a majority of the equipment made in the country shows "the capacity of 'Atmanirbhar Bharat' and also symbolises the rising confidence on defence materials made in India."

"There will be more than 400 equipment which will be bought only under Make in India (initiative). Imagine such a huge budget will strengthen the pillars of Indian companies," Modi said. Talking about the future opportunities in space, Modi said India will have to increase its preparations. "Our defence forces will have to find new innovation opportunities," he said, adding that space technology is also setting up a new definition of India's generous thinking by sharing the benefits with other countries. "Many small African countries are benefiting from this. There are more than 60 developing countries with which India is sharing its space science," he said. By next year, India will share real-time access of Indian satellite data with 10 ASEAN (Association of Southeast Asian Nations) countries. "Even developed European and American countries are using our satellite data," he said. India's youth will realise the possibilities related to the space sector in a timely manner and with better quality taking inspiration from (late space scientist) DrVikram Sarabhai. The youth will give a new energy to our commitment, he said.

Modi also said that after his government came to power, they decided to set up an operational base in Deesa, and "this expectation of our forces is being fulfilled today". This region will now become an effective centre for the country's security, he said. "The international border is just 130 km away, If our forces, especially the Air Force, will be in Deesa, we shall be able to respond in a much better way to any challenge on the western border," he said. Modi said for this airfield, Gujarat had given land way back in 2000, and as the then chief minister he tried his best for its construction and explained this to the then central government about its importance. "But nothing happened for 14 years," he said. "So many question marks were put on files that it took time to put things into the right perspective even after I went there (at the Centre).

After we formed the government, we decided to make an operational base in Deesa and the expectations of our forces are being met today," he said. Modi also said this is an unprecedented Defence Expo as it is for the first time that only Indian companies are participating in it. There are more than 1,300 exhibitors which include the Indian defence industry, some joint ventures associated with it, Micro, Small and Medium Enterprises (MSMEs) and more than 100 Start-ups, he said. He said Gujarat's identity as a developed state and its industrial capabilities will brighten with the DefExpo being held here.

<https://economictimes.indiatimes.com/news/defence/decision-of-defence-forces-to-buy-most-of-country-made-equipment-shows-capacity-of-atmanirbhar-bharat-pm-modi/articleshow/94966869.cms>



**Press Information Bureau
Government of India**

Ministry of Defence

Wed, 19 Oct 2022 03:54 PM

Prime Minister Shri Narendra Modi Unveils Indigenous Trainer Aircraft HTT-40, Designed & Developed by HAL, During DefExpo 2022

Prime Minister Shri Narendra Modi unveiled HTT-40, an indigenous trainer aircraft designed and developed by Hindustan Aeronautics Limited (HAL), at the India Pavilion during 12th DefExpo in Gandhinagar, Gujarat on October 19, 2022. Raksha Mantri Shri Rajnath Singh, Chief Minister of Gujarat Shri Bhupendra Patel were among those present on the occasion. The aircraft has state-of-the-art contemporary systems and has been designed with pilot-friendly features. With over 60 per cent in-house parts and collaboration of private industry, it is a shining example of the vision of 'Aatmanirbhar Bharat'.

The HTT-40 would be used for basic flight training, aerobatics, instrument flying and close formation flights whereas its secondary roles would include navigation and night flying. It is a testament to the cutting-edge technology designed to meet primary training requirements of the Indian defence services. Built around a meticulously-tested turbo-prop engine, the aircraft is equipped with the latest avionics, an air-conditioned cabin and ejection seats. It boasts of unique features like running change-over of pilots, hot-refuelling and short-turnaround time. All the tests required for certification were completed in record six years from the first flight.

The HTT-40 has completed all systems tests, all PSQR performances, hot weather, sea level and cross wind trials and user assisted technical trials. It demonstrated rain water resistance. Provisional clearance for airworthiness of the aircraft is received from Centre for Military Airworthiness and Certification (CEMILAC).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869196>

 **Hindustan Times**

Wed, 19 Oct 2022

Self-Reliance in Defence a Mark of New India: PM

India has added 101 more military items that will only be procured domestically, Prime Minister Narendra Modi announced on Wednesday, hailing the strides taken by the country's indigenous defence sector as a testament to "new India's" efforts and the beginning of a future that will boost India's security, economy, and innovation. Modi said that the expansion of the list was a

reflection of the military's growing confidence in India-made weapons and said that this recognition extended globally, with more than 75 countries now making purchases from Indian companies.

"I have been told today that 101 more items have been added to the list of [defence] items that will be sourced only from India... with this, a total of 411 defence items and equipment will be purchased through Make in India," he said while inaugurating the DefExpo 2022 in Ganghinagar. Modi added that the business this will bring to Indian companies will boost research, innovation and job opportunities for the Indian youth. The ministry of defence separately released the list, which it said included "equipment and systems that are in development and are likely to translate into firm orders in the next 5 to 10 years".

"As per preliminary estimates, more than ₹1,75,000cr worth orders would be placed on Indian industry in the next 5-10 years," the document outlining the new list added. Modi added that 68% of the capital procurement budget for defence has been earmarked for the domestic industry in 2022-23. "Eight years ago, India was known as the world's biggest defence importer. We would buy materials from all over the world. But new India has shown the intent and resolve to Make in India the success story of India's defence sector," he said.

The PM added that in the last five years, the defence outlay and exports have increased eight times and India now exports equipment to more than 75 countries. "In 2021-22, India's defence export was valued at \$1.5 billion, or ₹13,000 crore. In coming years, we have targeted for it to reach a value of \$5 billion, or ₹40,000 crore". India's push on indigenisation comes at a time when geopolitical developments have underscored the pitfalls of relying on foreign partners for critical imports. For instance, at present, India is under growing pressure from western nations to curtail imports from Russia, its largest defence partner, after Moscow invaded Ukraine.

Experts agreed it is crucial for India to have a domestic industry for defence purchases. "There is no doubt that India needs to indigenise its defence procurements as dependence on imports can often become hugely constraining in the type of capabilities that we need to build," said lieutenant general (retired) DS Hooda, the former Northern Army commander. "The restrictions on foreign imports now need to be followed up by structured government policies that hand-hold the private sector in developing the military industry in India. Without this support our ambitions could remain incomplete," he added.

The ministry of defence first unveiled a "Positive Indigenisation List" on August 21, 2020 and followed it up with one each on May 31, 2021 and April 7, 2022 to detail defence items that cannot be imported. The list issued in April includes subsystems that India imports from Russia for weapons and platforms, including the T-90 and T-72 tanks, BMP-II infantry combat vehicles, warships and submarines, and anti-tank missiles. The Prime Minister listed Brahmos missiles, Light Combat Helicopters and the INS Vikrant warship as examples of Indian defence industry's sophistication. "The Brahmos is considered the most advanced in its category and is also becoming the missile of choice for many other nations."

The 12th edition of the Defence Expo has been organised on the theme "Path to Pride" and includes only domestic companies among participants. The DefExpo 2022 also marks the celebration of one year of the formation of the seven new defence companies, carved out of the erstwhile Ordnance Factory Board. Shortly before concluding his speech, Modi said: "This is the very same country that once released pigeons, today it has reached a stage where it is releasing

cheetahs. The events may look small at times but the underlying message is bigger” to illustrate the strides in the defence sector.”

At the India Pavilion, the Prime Minister unveiled HTT-40 - the indigenous trainer aircraft designed by Hindustan Aeronautics Limited (HAL). During the programme, the PM also launched Mission DefSpace to develop innovative solutions for the Defence Forces in the Space domain through industry and startups. At the inauguration ceremony, Modi also laid the foundation stone of 52 Wing Air Force Station Deesa. “After coming to the government, we decided to build an operational base in Deesa and this expectation of our forces is being fulfilled today. This area will now become an effective centre of security of the country,” Modi said.

<https://www.hindustantimes.com/india-news/selfreliance-in-defence-a-mark-of-new-india-pm-101666203474168.html>

THE ECONOMIC TIMES

Thu, 20 Oct 2022

Space Defence Tech is Future, Says Modi

Announcing India's intent to develop a range of military applications for space warfare, Prime Minister Narendra Modi launched a new initiative that would enable the industry to offer solutions to the armed forces for future offensive and defensive requirements. He also laid the foundation stone for a new airbase at Deesa in Gujarat, close to the border from Pakistan and said the country is ready to respond to any misadventure on the Western border. Speaking at the flagship military exhibition DefExpo here, he hinted that defence applications in space will not only help the Indian armed forces but can also be extended to friendly foreign nations.

Space technology is an example of what security will mean for any strong nation in future. Various challenges in this area have been reviewed and identified by the three services. We have to work fast to solve them," the PM said. As part of the initiative, 75 challenges for space technologies will shortly be declared by the defence ministry. Startups, innovators and the private sector will be invited to find solutions for the problems that will include both offensive and defensive capabilities. Developmental work is likely to be partially funded by the government. While details of the challenges are yet to be shared, the presentation at DefExpo showcased bringing down of satellites by ground based lasers. Modi also released a list of 101 items that would no longer be imported by India.

<https://economictimes.indiatimes.com/news/defence/space-defence-tech-is-future-says-modi/articleshow/94973320.cms>



**Press Information Bureau
Government of India**

Ministry of Defence

Wed, 19 Oct 2022 09:01 AM

Defence Secretary Holds Bilateral Meetings with Delegations from African Nations on the Sidelines of DefExpo 2022

As a part of DefExpo 2022, the 2nd India-Africa Defence Dialogue was organised in Gandhinagar, Gujarat on October 18, 2022. The Defence Secretary held a number of bilateral meetings with delegations from African nations on this day. A bilateral meeting was conducted with Lt Gen Isman Mohamed Hassan Karar, Secretary General MoD, Sudan. Lt Gen RashadAbdelhamid Ismail Abdalla, Sudan Army Chief was also present. The ongoing defence cooperation issues and potential areas for future cooperation were discussed.

A Zambia delegation led by Mr Norman Chipakupaku, Permanent Secretary, MoD Zambia met Defence Secretary Dr Ajay Kumar. Issues relating to training and capacity building were discussed, in addition to the review of ongoing bilateral defence cooperation.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869035>

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Wed, 19 Oct 2022

Defence Secretary Holds Bilateral Meetings with Delegates from African Nations

As a part of Defence Expo 2022, the second India-Africa Defence Dialogue was organised in Gandhinagar, Gujarat, on 18 October, India's defence ministry said in a statement on Wednesday. The defence secretary held a number of bilateral meetings with delegations from African nations. A bilateral meeting was conducted with Lt Gen Isman Mohamed Hassan Karar, Secretary General MoD, Sudan. Lt Gen RashadAbdelhamid Ismail Abdalla, Sudan Army Chief was also present. The ongoing defence cooperation issues and potential areas for future cooperation were discussed. "A Zambia delegation led by Mr Norman Chipakupaku, Permanent Secretary, MoD Zambia met Defence Secretary Dr Ajay Kumar.

Issues relating to training and capacity building were discussed, in addition to the review of ongoing bilateral defence cooperation," read a ministry release. Defence secretary Ajay Kumar also met the Niger delegation led by Brigadier General DiddilliAmadou, Secretary General of the Defence Minister, Niger. Potential areas for defence cooperation between the two nations were deliberated. "A Mali delegation led by Maj Gen SidikiSamake, Secretary General of the Department met the Defence Secretary. They discussed potential defence cooperation including

defence industrial cooperation issues," the ministry said. Earlier today, Prime Minister Narendra Modi inaugurated DefExpo 2022 at Mahatma Mandir Convention and Exhibition Centre in Gandhinagar. This is the 12th edition of the event that has been organised on the theme 'Path to Pride'.

Addressing the gathering, the prime minister welcomed delegates to the event. Remarking on the organisation of the DefExpo 2022, PM Modi said it paints a picture of 'New India' and its capabilities whose resolve is being forged at the time of AmritKaal. He added that it is an amalgamation of the country's development as well as states' cooperation. "It has the power and dreams of the youth, it has the resolve and capabilities of the youth. It has hopes for the world and opportunities for friendly nations," PM Modi said.

<https://www.livemint.com/news/india/defexpo-defence-secretary-holds-bilateral-meetings-with-delegates-from-african-nations-11666169672928.html>



Press Information Bureau
Government of India

Ministry of Defence

Wed, 19 Oct 2022 09:20 AM

India-Africa Security Fellowship Programme' at MP-IDS Launched during India-Africa Defence Dialogue on the Sidelines of DefExpo 2022

The India-Africa Defence Dialogue (IADD) was held on the sidelines of DefExpo 2022 in Gandhinagar, Gujarat on October 18, 2022. The Gandhinagar Declaration, adopted as the outcome document of the second edition of the IADD, charted out new areas for enhancing the India-Africa defence and security partnership. During the IADD, in keeping with the new proposals of the Gandhinagar Declaration, RakshaMantriShriRajnath Singh launched the 'India-Africa Security Fellowship Programme' and released its brochure by handing it over to Director General, ManoharParrikar Institute for Defence Studies and Analyses (MP-IDS).

MP-IDS, the knowledge partner for the IADD, will host the Fellowship Programme. The fellowship will give an opportunity to African scholars to pursue research on defence and security issues in India. The fellows would be attached with the MP-IDS for a period of 1-3 months. A stipend would also be provided to the scholar. Further details of the application procedure may be gathered from the MP-IDS website

[\(https://www.idsa.in/\)](https://www.idsa.in/).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869040>



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The Indian Armed Forces are moving ahead in the right direction with its vision, superior combat systems, and reliance on evolving innovations and technologies. To speed up the pace of modernisation of the existing military equipment many policy decisions and actions have been taken to overhaul the entire war machinery of the country.

One of the largest of its kind, the Defence Expo 2022 is the right step towards self-reliance. As India celebrates its 'Azadi Ka Amrit Mahotsav', the DefExpo 2022 gains further significance with its theme 'Path to Pride' invoking nationalistic pride and encouraging citizens to partake in nation-building through establishing a capable indigenous defence industry.

The flagship event of the Ministry of Defence, Government of India, showcases the dramatic strides made in the realm of defence manufacturing, both by India's Defence Public Sector Undertakings (DPSU) and the private sector. A wide variety of defence equipment that has been indigenously developed and produced under license agreements with leading defence original equipment manufacturers (OEMs) globally are displayed here.

As part of the DefExpo, a live demonstration by the Army, Navy, Air Force, Coast Guard, and Defence Research and Development Organisation (DRDO), showcasing land, naval, and air procedures, and systems in action has been scheduled. This year, the DRDO plans to display a wide range of products encompassing strategic and tactical weapon systems, defence equipment, and technologies - from Border Surveillance System (BOSS), Laser Fence System (LFS), BrahMos Air Version Missile, Advanced

Expanding India's defence capabilities and powers

The 12th edition of Asia's largest defence event showcases the might of the India's defence industry



Towed Artillery Gun System (ATAGS), Wheeled Armoured Platform (WhAP), Prahar Missile, Rudram III Missile, Quick reaction Surface to Air Missile (QRSAM) and Medium Range Surface to Air Missile (MRSAM) among others.

The central theme for this year's DRDO participation is based on the 3D (DRDO, Designed and Developed) ecosphere. The organisation will also showcase technological advancements made by its laboratories as well as its partnerships with the industry in recent years while representing a high level of indigenously advanced and futuristic defence products and technologies that contribute towards *Atmanirbharta* in the defence sector.

The 12th edition of Asia's largest defence event is in line with the vision

of Prime Minister Narendra Modi to achieve self-reliance in defence and achieve an export of USD 5 billion by 2025. India has successfully established itself as an emerging defence manufacturing hub with numerous international orders being bagged by Indian companies in recent years. According to the Ministry of Defence, over 50 startups will showcase their products at the pavilion. For the first time, states/union territories have been invited to set up pavilions at the event, with several confirming their participation.

Over the years, the expo has been able to gather thousands of footfalls. At the expo, participants get an opportunity to showcase their equipment and platforms and are able to explore the strengths and capabilities of the expanse of the Indian defence industry for forging business partnerships. The platform also boosts investment, expands manufacturing capacities and capabilities, and discovers avenues for technology absorption. Each year, the DefExpo puts forward the unmatched innovation and formidable machinery of the Indian Armed Forces.



ONE OF THE LARGEST OF ITS KIND,
THE DEFENCE EXPO 2022
SHOWCASES THE DRAMATIC
STRIDES MADE IN THE REALM OF
DEFENCE MANUFACTURING

India will Emerges World's Defence Manufacturing Hub in Next 25 Years: Rajnath Singh at DefExpo

Defence Minister Rajnath Singh on Wednesday said that the DefExpo 2022 reflects India's strong resolve to safeguard the nation and said that the country would become a defence manufacturing hub for the world in the next 25 years. Prime Minister Narendra Modi inaugurated 'DefExpo 2022' at Mahatma Mandir Convention and Exhibition Centre in Gandhinagar today. With an aim to give impetus to the defence sector, India's "biggest ever" defence exhibition – DefExpo 2022 is being held in Gandhinagar, Gujarat. Addressing the inaugural event, the Defence Minister said that Path to Pride is not just a theme of this Expo, but a new objective of New India.

"In line with PM Modi's vision to make India a strong, self-reliant nation, the theme of this Expo is 'Path to Pride'. Path to Pride is not just a theme of this Expo, but a new objective of New India," said Singh. "Organizing this Def-Expo at the beginning of 'Amritkaal', reflects our strong resolve to safeguard the nation and become a defence manufacturing hub for the world in the next 25 years," he added. Addressing the gathering, the Prime Minister welcomed the delegates to an event of the capable and Aatmnirbhar Bharat both as a Prime Minister and as a son of Gujarat. Remarking on the organisation of the DefExpo2 2022, the Prime Minister said that it paints a picture of New India and its capabilities whose resolve is being forged at the time of AmritKaal. He further added that it is an amalgamation of the country's development as well as states' cooperation.

"It has the power and dreams of the youth, it has the resolve and capabilities of the youth. It has hopes for the world and opportunities for friendly nations." the Prime Minister said. Underlining the uniqueness of this edition of Defexpo, the Prime Minister said "this is the first defence expo where only Indian companies are participating and it features only Made in India equipment." He announced "From the land of Iron Man, Sardar Patel we are setting an example of the capabilities of India before the world. The Expo has more than 1300 exhibitors which include the India Defence Industry, some joint ventures associated with Indian Defence Industry, MSMEs and more than 100 startups." The Prime Minister remarked that it provides a glimpse of the capability and possibility of India in one single frame.

He further informed that more than 400 MoUs are being signed for the first time ever. At the India Pavilion, Prime Minister unveiled HTT-40 – the indigenous trainer aircraft designed by Hindustan Aeronautics Limited (HAL). According to the Prime Minister's Office (PMO), the aircraft has state of art contemporary systems and has been designed with pilot-friendly features. During the programme, Prime Minister also launched Mission DefSpace – to develop innovative solutions for the Defence Forces in the Space domain through industry and startups. At the inauguration ceremony, PM Modi also laid the foundation stone of 52 Wing Air Force Station Deesa. This year's DefExpo is the first-ever edition exclusively for Indian companies. Indian companies, Indian subsidiaries of Foreign OEMs, Division of a company registered in

India, and Exhibitor having a joint venture with an Indian company will be considered as Indian participants.

The DefExpo 2022 also marks the celebration of one year of the formation of the seven new defence companies, carved out of the erstwhile Ordnance Factory Board. All these companies will participate in DefExpo for the first time. 451 partnerships in terms of MoUs, Transfer of Technology agreements and product launches, almost double than the last edition, are expected during the Bandhan ceremony on October 20. The India Pavilion – a marquee pavilion of the Department of Defence Production – will showcase the maturity of indigenous defence products, start-ups and the latest technology, including Artificial Intelligence in defence, while presenting India's vision for 2047.

In addition, there will be an exclusive Innovations for Defence Excellence (iDEX) Pavilion to showcase the prowess of the country's start-ups carrying out R&D and innovation in futuristic technologies. For the first time, States, Union Territories (UTs) have been invited to set up pavilions at the event. The Defence Minister has emphasised that with this new initiative, States, UTs will get an opportunity to participate in nation-building by attracting investment and bolstering their potential of indigenous aerospace and defence manufacturing.

<https://theprint.in/india/india-will-emerge-as-worlds-defence-manufacturing-hub-in-next-25-years-rajnath-singh-at-defexpo/1174150/>



Wed, 19 Oct 2022

Army Chief Hails Indigenous Weapon Systems at DefExpo 2022

Army Chief General Manoj Pande exuded confidence in the indigenous weapon systems and said that these equipment were of world-class quality. His remarks came while addressing media persons at the DefExpo 2022 in Gujarat's Gandhinagar today. "Whatever has been produced ingeniously is as good as what's available in the world market. The Russia-Ukraine conflict has given us profound lessons, told us you need to be self-reliant and not depend on any global supply chains to the extent possible," General Pande told ANI. He also highlighted the projects and types of equipment that were in the pipeline. "For our Make I projects, there are 2-3 major projects we're looking at including light tanks, Future-ready Combat Vehicles and Future Infantry Combat Vehicles. These are partially funded by the government. In the Make II category, we've 43 projects, in which about 187 industries are participating, these amount to Rs 27,000 crore and largely pertain to improving our intelligence, and surveillance capabilities. We are also looking at projects in artificial intelligence," he added.

The Army Chief hailed the Made-in-India strategic defence equipment and stressed, "We can absolutely and undoubtedly win the wars of the future with indigenous weapon systems. All new ingeniously developed technology has performed well in our forward areas. The advantage of all this being indigenous is sustenance becomes easier." With an aim to give impetus to the defence sector, India's "biggest ever" defence exhibition - DefExpo 2022 - began in Gandhinagar, Gujarat on October 18. This is the 12th edition of the event organised on the theme 'Path to

Pride'.Addressing the curtain raiser press conference in Gandhinagar on Monday, Defence Minister Rajnath Singh said, that the DefExpo 2022 will showcase the growing prowess of the domestic defence industry, calling it one of the major drivers of the nation's resolve to achieve 'Make in India, Make for the World'.

"The biennial exhibition has been organised to support, showcase and forge partnerships for the Indian aerospace and defence manufacturing sectors with Indian as well as global customers to achieve the overall objective of catering to domestic requirements while fulfilling the needs of friendly foreign countries," Rajnath Singh said.The Defence Minister termed DefExpo 2022, exclusively for Indian companies, as a humble tribute of an 'Aatmanirbhar Bharat' to Mahatma Gandhi who he called the "pillar of the Swadeshi movement".

<https://www.aninews.in/news/national/general-news/army-chief-hails-indigenous-weapon-systems-at-defexpo-202220221019155302/>



Thu, 20 Oct 2022

Desi Robot Ballbot& Drone Eyerov Tuna Inspire Visitors at Defexpo

It was curtains for the five-day DefExpo2020 on Sunday with thousands of visitors thronging the venue here at VrindavanYojana to get a glimpse of the war-fighting and intelligence-enabling machines that were on display.At this biennial show, primarily for land-based military equipment, there were several home-grown robotic solutions on display. Two such systems picked for you – Bollbot and EyeROV Tuna.Ballbot is a product from Centre for Artificial Intelligence and Robotics (CAIR), a Bengaluru-based DRDO lab, while EveRov Tuna is from a private firm Irov Technologies based out of Kochi.

Ballbot

Scientists from CAIR told Onmanorama during DefExpo2020 that the Ballbot is an ideal solution for surveillance, reconnaissance and patrolling. It has a modular chassis, sensor and computer which can be reconfigured as per the specific requirements.The Ballbot is targeted for CI/CT (counter-intelligence and counter-terrorism) operations and for paramilitary forces.“It will provide remote eyes on the ground and reduce human casualty,” says a scientist.Developed in 18 months, the Ballbot is yet to undertake any trials by the users. But the engineered version for field conditions has been demonstrated to potential users.Ballbot is a product from Centre for Artificial Intelligence and Robotics (CAIR), a Bengaluru-based DRDO lab, while EveRov Tuna is from a private firm Irov Technologies based out of Kochi.

EyeRov Tuna

EyeRov Tuna is fitted with a camera that does the duties of sending live video feed of the underwater environment. It can be used for inspections of railway bridge piers, ship hull, dams and port structures to name a few.At DefExpo2020, many defence officials seem to have shown their keen interest in the EyeRov Tuna, a product that’s already in operation.This MROV can be used for salvage operations as well.“Our MROV is cost-effective, easy to operate and maintain.

This forms the fundamental requirement for any user and EyeRov Tuna satisfies them all,” adds Nirmal. With AI (artificial intelligence) making deep inroads in aerospace and defence sector, the DefExpo2020 saw many companies exhibiting their products for military and commercial use. The dedicated India Pavilion at the show saw many futuristic technologies such as AI, Augmented Virtual Reality (AVR), Autonomous Systems, Internet of Military Things (IoMT) and Industry 4.0 to name a few.

<http://www.indiandefensenews.in/2022/10/desi-robot-ballbot-drone-eyerov-tuna.html?m=1>



Wed, 19 Oct 2022

India Avoids the Big Clash of Russia with US, Israel, France at DefExpo 2022, as Global Firms Vie for the Indian Pie

It is to be noted that this defense exhibition was originally scheduled to be held from the 10th to the 14th of March at the same venue. However, in an abrupt move, the exhibition was postponed at the last minute on the grounds that the participants were ‘experiencing problems related to logistics’ in the wake of the Russian invasion of Ukraine. However, the truth of the matter was that the government was not sure how it would handle the large presence of the Russian manufacturers at the venue, where there would also be representatives of the defense companies from the West, mainly from the United States, the UK, and France. But this time, the situation was handled well, with clever use of the routes through the Indian companies. The Modi government said that it had limited the exhibition to the participation of Indian companies.

But then there is a catch. Foreign entities (original equipment manufacturers or OEMs) could come in a different way. That is through either their Indian subsidiaries or as partners in joint ventures with an Indian company. This condition has ruled out the significant presence of Russia in the exhibition as it has very few joint ventures and special purpose vehicles (SPV) with Indian companies, especially in the private sector. The notable exception, though, is BrahMos Aerospace, which was established in 1988 as an SPV between DRDO and the Russian Joint Stock company – earlier Federal State Unitary Enterprise – NPO Mashinostroyeniya, or NPOM.

Some Russian exhibitors (Rosoboronexport) have also sneaked in through Indo-Russian Rifles Private Ltd. This entity came into being in 2021, with Advanced Weapons and Equipment India Limited and Munitions India Limited (both Defence Public Sector Undertakings) partnering with Rosoboronexport and Kalashnikov (formerly Mishmash) of Russia. They are supposed to manufacture 6.1 lakh AK- 203 assault rifles at Korwa in the Amethi district of Uttar Pradesh. Be that as it may, the Russian presence this time pales into insignificance compared to the strength of their delegations to previous DefExpos, where they overwhelmed other foreign OEMs. The US, French and Israeli business delegates, in contrast, are in much bigger numbers at the event, thanks to the fact that their companies have expanded their footprints in India more firmly, ensuring their presence at the exhibition.

The US companies like Boeing, Lockheed Martin, and Honeywell Aerospace are among the notables that have several joint ventures and other forms of partnerships with the Indian private and public sector companies and the Defence Research Development Organisation (DRDO). In fact, US companies have developed long-term business interests in many Indian joint ventures. So much so that the HTT-40, the indigenous trainer aircraft designed by Hindustan Aeronautics Limited, that Prime Minister Modi launched today at the inaugural function of the DefExpo 22, has the turboprop engine provided by Honeywell. Incidentally, one of the principal goals of the DefExpo – 22 is to encourage the Aerospace and Defence manufacturing sector. Modi underlined that by saying, “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.” “Mission Defence Space,” he continued, “will not only encourage innovation and strengthen our forces but also provide new and innovative solutions.” The Prime Minister highlighted that space technology is shaping new definitions of India’s generous space diplomacy, giving rise to new possibilities. “Many African countries and many other small countries are benefiting from this,” he added. The Prime Minister informed that there are more than 60 developing countries with whom India is sharing its space science. “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.

Incidentally, seventy-five (75) countries are participating in DefExpo 2022, which also includes the Defence Minister hosting yesterday the second India-Africa Defence Dialogue (IADD) and the Indian Ocean Region plus (IOR+) conclave that is taking place today (October 19). More than 53 African countries have been invited for IADD and 44 for the IOR+ conclave. “IADD and IOR+ Conclave will be two very important events for promoting peace, security, prosperity & defense cooperation throughout the region and establishing new defense and industrial partnerships,” according to India’s Defence Minister Rajnath Singh. It seems that Africa and the Indian Ocean Region are the key targets that India has identified to export its arms products.

Modi wants India to emerge as a major arms exporter. In the defense sector, the Prime Minister said, “new India is moving ahead with the mantra of Intent, Innovation, and Implementation. Till eight years ago, India was recognized as the world’s largest defense importer. But New India showed intent, showed willpower, and ‘Make in India’ is becoming a success story in the defense sector today. Our defense exports have grown 8 times in the last 5 years. We are exporting defense materials and equipment to more than 75 countries of the world. In 2021-22 Defence exports from India reached \$1.59 billion, i.e., about 13 thousand crore rupees. And in the coming time, we have set a target to reach 5 billion dollars, i.e., 40 thousand crore rupees” he added. All told, as DefExpo is a trade-oriented initiative, its success ought to be measured in terms of the volume of business generated. Regrettably, all the previous editions of the Indian DefExpo have not really revealed such details.

The exhibitions before always claimed a number of bilateral government-to-government meetings and MoUs on defense undertakings and business. But rarely do they fructify in reality. Similarly, though the primary object of a DefExpo is to showcase Indian products for exports, invariably, it ends up deciding to buy more and more foreign equipment because of its modernity and technological superiority. Broadly speaking, India’s defense industrial

policy (DIP) has so far been marked by three principal features. First, India intends to maximize its indigenous production through its own efforts – quality personnel/scientists/technologists, and production centers. Second, if indigenously not feasible, then the country will go for licensed production of what could be obtained abroad. This obviously involves the transfer of technology from foreign vendors so that, over the years, the country gains the required knowledge and expertise to develop arms on its own. Third, if the situation warrants, then the country will go for direct purchases. But it has so happened that the third feature has over-dominated the DIP as a whole.

The most fundamental flaw in India's DIP is that the country has not spent enough on research and development (R&D). It is very easy to criticize the DRDO, but the fact remains that the DRDO's share in India's defense budgets is not much to talk about if one compares the sums that the major arms exporters invest in R&D. India's brightest students do not go for R&D. There is a tremendous shortage of qualified engineers and scientists in India's defense sector. And this explains why the second feature of the DIP is equally poor. It is, of course, true that this year twenty-five percent of India's Defence R&D budget has been set aside for industry, start-ups, and academia so that the private sector should also come on par with DRDO and defense PSUs. A Special Purpose Vehicle Model has also been proposed in the budget. This will establish the role of the private industry as a partner beyond just a vendor or supplier. All this may not be enough, but at least it is noteworthy that a path has been paved.

<https://eurasianimes.com/india-avoids-the-big-clash-of-russia-with-us-israel-france-at-defexpo-2022/>

Defence Strategic : National/International

Telangana  Today
FOR LOCAL TO GLOBAL NEWS

Wed, 19 Oct 2022

VEM Technologies, Hindustan Aeronautics Limited Sign MoU

VEM Technologies and Hindustan Aeronautics Limited (HAL) signed a memorandum of understanding at the DefExpo-2022 for production and delivery of 20 units of Centre Fuselage Assemblies (CFL) for Light Combat Aircraft (LCA) Tejas Mk1A. VEM had handed over the first ever CFL to HAL in July last year. The dedicated line established by VEM for the production of CFL is expected to deliver good volumes to HAL to meet the present and the future orders from Indian Armed Forces, which is likely to go up from the current confirmed order of 83 Tejas Aircrafts. VEM has also received the contract from HAL towards indigenous design and development of InfraRed Radiation Suppression System (IRSS) for Light Combat Helicopter (LCH). The company has established infrastructure including the hi-precision machinery, metallurgical processes and treatments and pneumo-hydraulic systems, fuel systems, automated printed circuit board assembly, composites, electro-optics and electrical integration facilities to

build the integrated systems for land, air and naval systems. It was founded in 1988. It has a research and development centre, which is recognised by the Department of Science and Technology. It has a design and engineering centre and manufacturing facilities at its two units in Hyderabad. VEM is also supplying complex mechanical, electrical, mechatronics and electronics systems to the Indian Space Research Organisation (ISRO), a release said.

<https://telanganatoday.com/vem-technologies-hindustan-aeronautics-limited-sign-mou>



Wed, 19 Oct 2022

Bharat Forge, General Atomics to Collaborate for Li-Ion Battery Systems

Bharat Forge has signed a collaboration deal with American technological giant General Atomics for the creation of lithium-ion battery systems for the Indian Navy. According to Bharat Forge, the two parties have also decided to collaborate on permanent magnet motors. Submarines among other naval units employ lithium-ion battery technology. The agreement was signed in Gandhinagar, Gujarat, on the sidelines of the DefExpo. The Electromagnetic Systems Group (GA-EMS) of General Atomics and Bharat Forge will work together in accordance with the parameters of the Memorandum of Understanding (MoU) to develop Lithium-Ion battery systems for naval platforms for the Indian Navy.

Baba Kalyani, Chairman Kalyani Group said, “General Atomics does Li-Ion battery solutions for naval platforms/submarines and our partnership with General Atomics is a firm step in the direction to develop Make-in-India solutions for the Indian Navy and setting up a strong defence technology and manufacturing vertical within India.” Scott Forney, President of GA-EMS said his company is looking forward to working with Bharat Forge “We are committed to working with companies like Bharat Forge, whose reputation for excellence and dedication to quality is synergistic with ours, as we continue to deliver technology innovations and cutting-edge systems for undersea and surface platforms,” he added.

<https://www.financialexpress.com/defence/bharat-forge-general-atomics-to-collaborate-for-li-ion-battery-systems/2721452/lite/>

THE TIMES OF INDIA

Wed, 19 Oct 2022

Major Reshuffle: Aramane Giridhar to be New Defence Secretary; Sanjay Malhotra Named Revenue Secretary

In a major shake up of country's top bureaucracy, the government on Wednesday appointed and reshuffled 16 senior officials as secretaries. While Andhra Pradesh cadre IAS Giridhar Aramane will take charge as new defence secretary from next month, Haryana cadre IAS Vivek Joshi has

been named as the new financial services secretary. Sanjay Malhotra, the current financial services secretary, has been appointed as the new revenue secretary and he will replace Tarun Bajaj who is retiring in November. In what is being seen as first such order by the Cabinet Committee on Appointment (ACC), six of these 16 officers will take charge as secretaries in new departments in December, January and February. For example, current rural development secretary NN Sinha will take charge of steel secretary on January 1, 2023. Jharkhand cadre IAS, Sailesh Kumar Singh will replace Sinha. Similarly, Sanjay Malhotra of Rajasthan cadre will take charge of revenue department in December. Rajasthan cadre IAS, from 1991 batch, who has been designated as officer on special duty in the shipping ministry, will take over as shipping secretary in February after superannuation of current secretary, Sanjeev Ranjan. Uttar Pradesh cadre IAS, Kamran Rizvi will take charge as heavy industries secretary in January. The ACC also approved the appointment of current NHA chairperson Alka Upadhyaya as new road transport secretary and Amrit Lal Meena of Bihar cadre as the new coal secretary. Odisha cadre IAS Sanjeev Chopra will be the new food secretary and MP cadre IAS Manoj Govil will be the new corporate affairs secretary. As per the order 1990 batch IAS Sanjay Kumar will be the new school education secretary and Rachna Shah of Kerala cadre will take charge of textile department. The government has also approved in-situ upgradation of eight officers as special secretaries in their current postings.

<https://timesofindia.indiatimes.com/india/aramane-giridhar-to-be-new-defence-secretary-sanjay-malhotra-named-revenue-secretary/articleshow/94970468.cms>



Thu, 20 Oct 2022

Major Army Training Exercise Conducted by Kharga Corps Concludes

A major Army training exercise was conducted by various units and formations of Ambala-based Kharga Corps in the Mahajan Area from October 2 to 18. During the exercise, the validation of latest operational concepts such as attack helicopters as maneuvering arm of ground forces, deep interdiction across adversary's obstacle systems, fighting in semi-developed terrain, use of hi-tech drones for tactical ISR (intelligence, Surveillance, and Reconnaissance) as force multipliers, sustained operations in desert terrain by use of polymer track ways and heliborne operations were conducted successfully.

The exercise also incorporated aspects of joint training with airborne operations in the territory across western borders, special forces drop behind enemy lines and simulated battlefield air strikes. An official of the Western Command said the exercise was successful in validating many important operational aspects and brought out valuable lessons, reinforcing a high degree of operational preparedness for the forces on the Western Front. The exercise was witnessed by Lt Gen Nav K Khanduri, general officer commanding-in-Chief (Western Command), and other senior dignitaries, who showered praise on all ranks for their professional readiness.

<https://www.hindustantimes.com/india-news/major-army-training-exercise-conducted-by-kharga-corps-concludes-101666237255860.html>

Wed, 19 Oct 2022

Turbulence for HAL in Malaysia

Amidst the ongoing political uncertainties in Malaysia, Hindustan Aeronautics (HAL)'s Light Combat Aircraft 'Tejas' deal with the Royal Malaysian Air Force (RMAF) hangs in limbo.

Political Situation in Malaysia

Based on the information in public domain, the Malaysian Prime Minister Ismail Sabri Yaakob has dissolved the Parliament following the tabling of their budget. Owing to this turmoil, the stocks crashed in the domestic market while the currency weakened.

Partner to Provider: The HAL Pitch

When the RMAF embarked on a journey to procure combat aircraft, it was looking at a wide range of fighter jets globally – these included Chinese JF 17 to the Indian Light Combat Aircraft (LCA) Tejas. The fierce competition for the Tejas was posed by the South Korean FA 50. The Malaysian woes were bigger than an ageing fleet of F-18s and MiG 29s. In the wake of the sanctions on Russia, following the ongoing Ukraine-Russia war, the Malaysian fleet of Russian helicopters had to be grounded. The Russian fleets have been due for maintenance which the war and the US led sanctions prohibit. HAL positioned itself as a long-term, broader defence partner for Malaysia. In addition to the LCA Tejas, the state-owned company agreed to provide Maintenance, Repair and Overhaul (MRO) facilities for the RMAF. HAL also opened its first overseas office in Malaysia.

The Korean Catch

Sharing his views with Financial Express Online, Girish Linganna, Aerospace & Defence Analyst, says, "On paper, the LCA Tejas wipes out the FA 50. The LCA Tejas has more hard points, greater payload capacity, greater service ceiling, greater speed and more advanced electronics suite." "From a design perspective, Tejas is a combat aircraft meant for asserting air superiority, head on. It has incorporated a delta wing design for greater manoeuvrability. The FA 50 is a weaponised cousin of the T 50 trainer which will be mated with missiles after the fact," he explains.

Both Malaysia and India have a commonality in their approach to Russia and the West, and have tried to balance the two sides and hence, have a mixed representation of the two in its defence forces. LCA Tejas enshrines the same principles that allow the RMAF to choose which country's missiles should arm the LCA. The stakes are overwhelming in HAL's favour, however diplomatic channels have cited the Malaysian Chief of Air Force General Tan Sri Dato' Sri Mohd Asghar Khan Goriman Khan as leaning towards South Korea. Based on reports in the public domain the deal is set to go to the South Korean manufacturer, KAI (Korean Aircraft Industry), it is costlier than the Tejas. KAI, reports indicate, is now evaluating the offer to match the price quoted by HAL for the LCA Tejas.

However, "it will be immature to count out Tejas at this stage," says the Aerospace & Defence Analyst. Adding, "HAL has been bullish on striking a deal with the RMAF and it has pulled

various tactics that become mutually beneficial. This is a testament to HAL's unique capability to not only offer a wide gamut of products and services but also position itself as a defence partner with credible, long term solutions."Sources have confirmed to Financial Express Online in Gandhinagar that a delegation from Malaysia is expected at the DefExpo 2022.

<https://www.financialexpress.com/defence/turbulence-for-hal-in-malaysia/2720648/lite/>



Wed, 19 Oct 2022

'Will not' Supply Weapons to Ukraine, Israel Defence Minister Says

Israel will not send weapons to Ukraine, Defence Minister Benny Gantz said Wednesday, two days after Russia warned that an Israeli move to bolster Kyiv's forces would severely damage relations. Our policy vis-a-vis Ukraine will not change -- we will continue to support and stand with the West, we will not provide weapon systems," Gantz told a briefing of European Union ambassadors, according to a statement from his office. Israel has walked a delicate diplomatic line since the start of the Russian invasion, seeking to preserve ties with Moscow. Israel needs Russian cooperation to continue its campaign of air strikes in neighbouring Syria, where Russian forces are present and where Israel frequently hits what it calls Iranian-linked targets. Israeli officials have also stressed the need to safeguard relations with Russia given the large number of Jews in the country and to avoid a return to Cold War era conditions, when Soviet Jews were largely cut off from Israel.

The Israeli stance has infuriated Ukraine. President Volodymyr Zelensky, who is Jewish, has on several occasions blasted Israel for failing to firmly oppose Russian aggression. The Israeli position has however evolved over recent months, from near neutrality to more forceful condemnations of Russia. Gantz said Wednesday that Israel would continue providing "humanitarian aid" to Ukraine, including "life-saving defensive equipment" and was likely to approve "an additional package" soon. But weapons supplies were off the table, "due to a variety of operational considerations," the defence minister added.

On Monday, Russia's former leader Dmitry Medvedev charged that "Israel appears to be getting ready to supply weapons to the Kyiv regime." "A very reckless move. It would destroy all bilateral relations between our countries," the former president and prime minister, who is now deputy head of the Russian Security Council, said in a statement on Telegram.

<https://www.hindustantimes.com/world-news/will-not-supply-weapons-to-ukraine-israel-defence-minister-says-101666181890260.html>

North fires more shells toward inter-Korean sea buffer zone

North Korea fired about 100 more artillery shells toward the sea Wednesday in response to South Korean live-firing drills at border areas as the rivals accuse each other of dialing up tensions on the Korean Peninsula with weapons tests. The drills conducted by both sides come amid heightened animosities over recent North Korean missile tests that it calls simulated nuclear attacks on South Korean and U.S. targets. South Korea's military detected the artillery being fired from a western North Korean coastal town, the Joint Chiefs of Staff said in a statement. On Tuesday night, North Korea fired about 100 shells off its west coast and 150 rounds off its east coast, the Joint Chiefs of Staff said earlier.

Both days, the North Korean shells landed in the northern parts of the maritime buffer zones the two Koreas created off their eastern and western coasts as part of agreements they made in 2018 to reduce tensions, according to the South's Joint Chiefs of Staff. North Korea also fired hundreds of shells at the buffer zones Friday in its most significant direct violation of the 2018 agreement. North Korea's military said the launches were a warning against what it called provocative South Korean artillery firing drills along the border earlier this week. "Our army strongly warns the enemy forces to immediately stop the highly irritating provocative act in the frontline areas," an unidentified spokesperson at the General Staff of the North's Korean People's Army said in a statement Wednesday.

South Korea's Defense Ministry said it conducted artillery drills at land border areas as part of its annual military exercises. But it said its drills didn't violate the 2018 accord because its shells didn't land in the buffer zones. South Korea's Joint Chiefs of Staff warned North Korea to immediately stop provocations that threaten peace and stability on the Korean Peninsula. It added that it is boosting its military readiness and, in coordination with the United States, is closely monitoring North Korea's moves. There were no reports of violence between the two Koreas. But animosities could persist as North Korea will likely react to South Korea's ongoing annual "Hoguk" field exercises with its own weapons tests. South Korean officials said the "Hoguk" drills are aimed at improving a military readiness against North Korean nuclear and missile threats and involve an unspecified number of U.S. troops.

North Korea views regular South Korea-U.S. military training as an invasion rehearsal. It said its recent barrage of missile tests were meant to issue a warning to one of the allies' earlier exercises involving a U.S. aircraft carrier. In parts of the "Hoguk" drills open to the media, South Korean and U.S. troops built floating bridges on a river southeast of Seoul to let tanks and other armored vehicles move over them. South Korea's army said Wednesday's training was meant to deal with a hypothetical enemy attack that would leave some of the bridges over the river destroyed.

"It's so far been extremely successful and demonstrated the strength of the ROK-U.S. alliance," said Capt. Sean Kasprisin, a company commander at the U.S. military, using the initials of South Korea's official name, the Republic of Korea. "We are definitely stronger together with the two nations." From Oct. 31 to Nov. 4, South Korea and the United States will also hold combined air force drills involving some 240 warplanes, including F-35 fighters operated by both nations. The

drills are designed to inspect the two countries' joint operation capabilities and improve combat readiness, the South Korean military said Tuesday.

China's Foreign Ministry spokesperson, Wang Wenbin, said at a briefing Wednesday that Beijing hopes all relevant countries would keep trying to look for a political settlement to ease tensions on the Korean Peninsula. North Korea has test-launched 15 missiles since it resumed testing activities Sept. 25. One of them was an intermediate-range ballistic missile that flew over Japan and demonstrated a range capable of reaching the Pacific U.S. territory of Guam and beyond. Some foreign experts say North Korean leader Kim Jong Un would eventually aim to use his expanded weapons arsenal to pressure the United States and others to accept his country as a legitimate nuclear state and lift economic sanctions on the North.

The North's artillery tests draw less outside attention than its missile launches. But its forward-deployed long-range artillery guns pose a serious security threat to the capital, Seoul, about 40 to 50 kilometers (25 to 30 miles) from the border with North Korea.

<https://www.thehindu.com/news/international/north-fires-more-shells-toward-inter-korean-sea-buffer-zone/article66031162.ece>



Thu, 20 Oct 2022

Russia's Iranian drones complicate Israel's balancing act

The Iranian-made drones that Russia sent slamming into central Kyiv this week have complicated Israel's balancing act between Russia and the West. Israel has stayed largely on the sidelines since Russia's invasion of Ukraine last February so as not to damage its strategic relationship with the Kremlin. Although Israel has sent humanitarian aid to Ukraine, it has refused Kyiv's frequent requests to send air defense systems and other military equipment and refrained from enforcing strict economic sanctions on Russia and the many Russian-Jewish oligarchs who have second homes in Israel. But with news of Moscow's deepening ties with Tehran, Israel's sworn foe, pressure is growing on Israel to back Ukraine in the grinding war.

Israel has long fought a shadowy war with Iran across the Middle East by land, sea and air. Lt. Col. Richard Hecht, a military spokesman, said the suicide drone attack in Ukraine had raised new concerns in Israel. "We're looking at it closely and thinking about how these can be used by the Iranians toward Israeli population centers," he said. The debate burst into the open on Monday, as an Israeli Cabinet minister called on the government to take Ukraine's side. Iran and its proxies in Lebanon, Syria, Iraq and Yemen have threatened Israel with the same delta-shaped, low-flying Shahed drones now exploding in Kyiv. The Iranian government has denied providing Moscow with the drones, but American officials say it has been doing so since August.

"There is no longer any doubt where Israel should stand in this bloody conflict," Nachman Shai, Israel's minister of diaspora affairs, wrote on Twitter. "The time has come for Ukraine to receive military aid as well, just as the USA and NATO countries provide." His comments set off a storm in Russia. Former Russian President Dmitry Medvedev said on Telegram that providing military aid to Ukraine would be "a very reckless move" by Israel. "It will destroy all interstate

relations between our countries,” he wrote. But Shai doubled down on Tuesday, while stressing his view did not reflect the government's official stance. “We in Israel have a lot of experience in protecting our civilian population over 30 years. We've been attacked by missiles from Iraq and rockets from Lebanon and Gaza,” Shai, a former military spokesman, told The Associated Press. “I'm speaking about defense equipment to protect Ukraine's civilian population.”

The Israeli prime minister's office and Defense Ministry both declined to comment. For years, Russia and Israel have enjoyed good working relations and closely coordinated to avoid run-ins in the skies over Syria, Israel's northeastern neighbor, where Russian air power has propped up embattled President Bashar Assad. Russia has let Israeli jets bomb Iran-linked targets said to be weapons caches destined for Israel's enemies. Israel has also been keen to stay neutral in the war over concern for the safety of the large Jewish community in Russia. Israel frets about renewed antisemitic attacks in the country, with its long history of anti-Jewish pogroms under Russian czars and purges in the Soviet era. Over 1 million of Israel's 9.2 million citizens have roots in the former Soviet Union.

<https://www.dailypioneer.com/2022/world/russia-s-iranian-drones-complicate-israel-s-balancing-act.html>

Science & Technology News

THE ECONOMIC TIMES

Wed, 19 Oct 2022

Sankarasubramanian Named Principal Scientist of ISRO's Aditya-L1 Mission

The Indian Space Research Organisation on Wednesday said Sankarasubramanian K has been designated as the Principal Scientist of the Aditya-L1 mission. Aditya-L1 is the first observatory-class space-based solar mission from India. "The spacecraft will be placed in a halo orbit around the first Lagrange point, L1, of the Sun-Earth system," the Bengaluru-headquartered national space agency said in a statement. A satellite around the L1 point has the major advantage of continuously viewing the sun without occultation/eclipses, it was noted. This position provides a greater advantage of observing solar activities continuously, ISRO pointed out. 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 payloads carry out in-situ studies of particles and fields at the Lagrange point L1.

Sankarasubramanian is a senior solar scientist at the U R Rao Satellite Centre (URSC), Bengaluru. He obtained his PhD in Physics from Bangalore University through the Indian Institute of Astrophysics, Bengaluru. His research areas of interest are the Solar Magnetic field, Optics, and Instrumentation. Sankarasubramanian has contributed to AstroSat, Chandrayaan-1 and Chandrayaan-2 missions of ISRO in several capacities. Currently, he is heading the Space Astronomy Group (SAG) of URSC. SAG is involved in developing scientific payloads for the

upcoming missions of Aditya-L1, XPoSAt, and science payload onboard the Chandrayaan-3 propulsion module. He is also the Principal Investigator for one of the X-ray payloads onboard Aditya-L1. Sankarasubramanian also heads the Aditya-L1 Science Working Group, which has members from several institutes of India engaged in solar science research, the statement said.

<https://economictimes.indiatimes.com/news/science/sankarasubramanian-named-principal-scientist-of-isros-aditya-l1-mission/articleshow/94972239.cms>



Press Information Bureau
Government of India

Ministry of Science & Technology

Wed, 19 Oct 2022 03:53PM

CSIR-NIScPR Organises Fit India Freedom Run 3.0

National Institute of Science Communication and Policy Research NIScPR), New Delhi is a constituent laboratory of the Council of Scientific & Industrial Research (CSIR) which serves the Nation with its mandates of policy research and science communication related studies. To strengthen the 'Fit India Mission' of Government of India, CSIR-NIScPR is organizing 'Fit India Activities during 2-31 October 2022. Many sports activities are scheduled under this endeavor.

Staff members, Project Associates, Research Interns, AcSIR Students, Outsource manpower, friends and family members. NIScPR's Director In-Charge Dr. Sujit Bhattacharya flagged off this Fit India Freedom Run from its New Delhi Pusa Campus at 10:30 AM. On the occasion, Dr. Bhattacharya says that Fit India Run is an innovative gesture to make aware the staff members and other human resources of the institute for health and fitness. The Chairman of CSIR-NIScPR Committee for the Fit India Mission, ShriAshwani Kumar Brahmi briefed all the participants of Fit India Freedom Run about the concerned guidelines of the Govt. of India. In this activity, Dr. Mohammad Rais, Dr. Naresh Kumar, Dr. L. Pulamte, Dr. B. L. Garg, Dr. SandhyaWakdikar, Dr. MadhulikaBhati, Dr. Suman Ray, Dr. PuspanjaliTripathy, Dr. Shiv Narayan Nishad, Dr. ArvindMeena, Dr. Manish Mohan Gore, Dr. Meher Wan, Dr. Paramananda Barman (Scientists of CSIR-NIScPR), Shri Rajesh Kumar Singh Roshan, Controller of Administration, Shri Ajay Kumar, Controller of Finance & Accounts, ShriPankajGoswami, Administrative officer and other staff members of the Institute actively participated in this Fit India Run. The number of participants was more than 200.

CSIR-NIScPR is very active in sports activities and it regularly participates in Shanti SwarupBhatnagar Memorial Tournaments (SSBMT) along with the in-house sports activities. The SSBMT is a platform created by CSIR Sports Promotion Board to bring together the participation of different CSIR institutes to build a committed CSIR family and create team spirit, leadership and zeal to excel against all odds. Under SSBMT, competitions in games of Cricket, Volleyball, Table Tennis, Badminton, Chess, Carrom and Bridge are organized. CSIR-NIScPR is an active member of SSBMT

<https://pib.gov.in/PressReleasePage.aspx?PRID=1869194>

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