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समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology

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Sun, 13 Mar 2022

ब्रह्मोस सुपरसोनिक क्रूज मिसाइल का नया वर्जन, 800 किलोमीटर दूरी के टारगेट को करेगा तबाह

सामरिक क्षेत्र भारत निरंतर प्रगति कर रहा है। अब दुश्मनों के छक्के छुड़ाने के लिए भारत के पास कई अत्याधुनिक हथियार हैं, जिनसे हवा से हवा और हवा से सतह दोनों क्षेत्रों में मुकाबला किया जा सकता है। हाल ही में भारत सरकार के रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने ब्रह्मोस सुपरसोनिक क्रूज मिसाइल (BrahMos Supersonic Cruise Missile) का नया एयर-लॉन्च वर्जन जारी किया है। ब्रह्मोस मिसाइल की मारक क्षमता अपग्रेड करते हुए 800 किलोमीटर तक कर दी गई है।

अत्याधुनिक हथियारों से लैस भारतीय वायु सेना की क्षमता अब पहले से कई गुना बढ़ गई है। पाकिस्तान की एयर स्ट्राइक इस बात का उदाहरण है। दुश्मन के क्षेत्र में घुसकर मारने वाली भारतीय वायुसेना के बेड़े में अब ब्रह्मोस मिसाइल के अपग्रेड वर्जन शामिल हो चुका है। इसके सेना का ताकत काफी बढ़ गई है।

800 किलोमीटर के अधिक दूरी के टारगेट भेदन में सक्षम अब अपग्रेडेड ब्रह्मोस सुपरसोनिक क्रूज मिसाइल (BrahMos Supersonic Cruise Missile) का नया वर्जन लंबी दूरी की यात्रा कर सकती है और 800 किलोमीटर या उससे अधिक के लक्ष्य को मारने सक्षम है। हाल ही में भारत की सामरिक मिसाइल की सीमा में वृद्धि की गई है। रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने ब्रह्मोस के साफ्टवेयर को अपडेट करके मिसाइल की मारक क्षमता पहले से करीब 500 किलोमीटर बढ़ा दी गई है। पहले 300 किलोमीटर के टारगेट के कर सकती थी हिट पहले लड़ाकू विमान से छोड़े जाने के बाद ब्रह्मोस में 300 किलोमीटर दूर तक के टारगेट हिट कर सकती थी। यह मिसाइल तब चर्चा में आई जब यह तकनीकी खराब के कारण मिसफायर हो गई। मिसफायर होने के बाद यह पाकिस्तानी क्षेत्र में जा गिरी थी।

न्यूज एजेंसी एएनआई की रिपोर्ट के अनुसार अब ब्रह्मोस मिसाइल की सीमा पहले से काफी अधिक बढ़ा दी गई है। ब्रह्मोस सुपरसोनिक क्रूज मिसाइल अब 800 किलोमीटर और उससे ज्यादा के लक्ष्य को टारगेट करने में सक्षम है।

<https://hindi.oneindia.com/news/india/brahmos-supersonic-cruise-missile-new-air-version-can-hit-target-by-800-km-669376.html?story=3>

DRDO's Rustom II UAV Has Reached the Target Altitude of 28,000 Ft; No Need To Import ISR Drones: G Satheesh Reddy

In its new avatar, with structural changes and thrust on accountability, DRDO strives to push the boundaries. G Satheesh Reddy, Secretary DDR&D and Chairman DRDO has been responsible for much of the changes lately. In an exclusive interaction, Dr Reddy speaks with Manish Kumar Jha of BW Businessworld on the wide range of technological breakthroughs and innovations which are taking place in DRDO's laboratories spread across India. He makes major announcement on critical technologies, including aero-engine for AMCA, Rustom II, ATAGS, Light tank, Hypersonic system and Quantum breakthroughs.

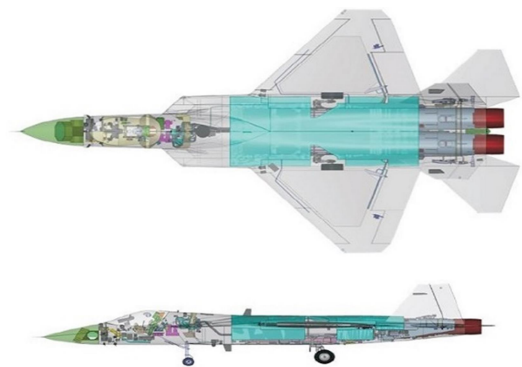
Defence is the thrust. Government has focused much on policies and looking the various possibilities that could boost defence manufacturing in India. It is ample now. Multiple announcement in the framework of the DAP 2020 has laid out concrete measures as it is unfolding the intention as how the defence sector is going to be.

According to SIPRI, the five biggest spenders in 2020, which together accounted for 62 per cent of global military expenditure, were the United States, China, India, Russia and the United Kingdom. US military expenditure reached an estimated \$778 billion and China's military expenditure, the second highest in the world, is estimated to have totaled \$252 billion in 2020.

While India's defense budget reached USD 70 billion USD in the current financial year (2022-2023). Leave aside the U.S. military spending and the military advancement for the reason that are a plenty but China cannot be taken off the map. We are already dealing with the Chinese military at our doors and that warrants a dictum of 'capability-comparison'.

Firstly, within the defence budget, the capital outlay, which focuses towards the modernization of Armed Forces has been increased by 12.82 percent with an allocation of USD 20.36 billion. Also, In recognition of the modernization deficit, the defence budget sets aside 25 percent of the total R&D budget for private industry. So what is our total defence R&D? Taking account of Defence Budget 2022-23, it comes around INR 12000 crores and another rough calculation for the R&D for the Industry makes it about INR 3000 Crores.

In the current defence budget of 2022-23, R&D allocation is less than 2 percent of total defence budget. The Lok Sabha Standing Committee on Defence 2019-2020 mentioned the PRC's R&D at 20 percent of the Chinese defence budget. 2021 budget, it would mean that China could spend as much as \$70 billion this year just on equipment alone which is for the procurement and military R&D. While the defence has the catalyst for the many technological breakthroughs, it is more so applicable today with a total transformation of battlefield.



ACMA

In the context, R&D in defence exhorts greater attention to fund such technology development in microelectronics, hypersonics, artificial intelligence (AI), cyber security, and similar high-priority military capabilities. This would propel the militarization of the fourth industrial revolution—artificial intelligence, big data, man-machine interfacing, autonomous unmanned systems, 5G networking, and the like—in order to create new dominant military-technological advantages. This builds up the case of Indigenization.

Such is the impact of the policies that put overall priority on R&D in Defence. The statistical spread is intended to understand the ecosystem of defense innovation. And within that India's Defense Research and Development Organization (DRDO) has been spearheading some of the most successful defence innovations, including the gradual advancement of indigenous missile programs. In its new avatar, with structural changes and thrust on accountability, DRDO has sets up to push the boundaries. Dr G Satheesh Reddy, Secretary DDR&D and Chairman DRDO has been responsible for much of the changes lately. In an exclusive interaction, Dr Reddy speaks with Manish Kumar Jha of BW Businessworld on the wide range of technological breakthroughs and innovations which are taking place in DRDO's laboratories spread across India. In the interaction, he projected the defence innovation in its timeline for that is so vital for the applications and its efficacy in the making of a military hardware. He also speaks about the crucial thread between DRDO and industry.

Beginning with the Advanced Towed Artillery Gun Systems (ATAGS) to Light Tank, Satheesh Reddy talks about the collaboration with Bharat Forge and TATA. Though fully designed by DRD, he is forthcoming on giving due credits to the industries involved in the project. "We have developed two guns with two industries. Major things are common. However, these are separate units which are made with their own expertise," he says.

But the bigger announcement he makes it for the staggering effort towards building the A medium-altitude long-endurance UAV (MALE UAV). What about having such capability which could do credible ISR activities and import substitute? That is about Rustom II as he tells me: Firstly, I would like to share a good news with you about the test we have done a day before. We have touched above 27500 feet altitude. So we have almost reached the target altitude.

On the crucial mission for AMCA, Reddy talks about the critical technologies for the aero engine: advanced materials, processing mechanism for the single crystal blade and success story for the propulsion systems.

On the naval front, DRDO has displayed the Air Independent Propulsion (AIP) System. The higher capacity fuel cell for AIP is the challenge that he talks about. Much is at stake for the P 75 I which is going to unravel the next generation submarine for the Indian Navy.

But what are the futuristic and exponential technological breakthroughs that DRDO is working on? Certainly, that remains for the Hypersonic Technology and Quantum Communications. It is no mean task.

<https://www.businessworld.in/article/DRDO-s-Rustom-II-UAV-Has-Reached-The-Target-Altitude-Of-28-000-ft-No-Need-to-Import-ISR-Drones-G-Satheesh-Reddy/13-03-2022-422723/>

DRDO begins work on psychological tests for recruiting officers in paramilitary forces

The Defence Research and Development Organisation (DRDO) has initiated work on developing psychological assessment tests for the selection of officers into the Central Armed Police Forces (CAPFs). Introduction of psychological tests, in addition to the written exam, physical test and personal interview, will enable CAPFs to recruit officers with the required mental acumen and leadership qualities required to work effectively in tough and stressful conditions, as is being done by the armed forces.

“We are calling separate batches of 10 officers from each CAPF for a week-long workshop to review the functioning and requirements of the respective force, identify individual vulnerabilities and chalk out a blueprint for the assessment modules that meet their functional parameters,” a DRDO scientist said. CAPFs that directly recruit officers at the Assistant Commandant level fall into two broad categories – border guarding forces that include the Border Security Force, Indo-Tibetan Border Police Force and the Shashtra Seema Bal, and non-border guarding forces like the Central Reserve Police Force and the Central Industrial Security Force are primarily meant for internal security duties and assisting in maintaining law and order. Assam Rifles has a dual mandate of internal security in the north-east as well as guarding the border with Myanmar.

The project is being undertaken by DRDO’s Defence Institute of Psychological Research. The laboratory has also developed and modified various psychological tests for assessment of armed forces personnel for entry as well as in-service requirements.

Psychological tests for recruitment of officers into the armed forces are meant to assess a candidate’s personality, which includes leadership skills, moral and social traits and the ability to perform under pressure in difficult situations.

“Unlike the armed forces, CAPFs mainly function in a peacetime environment and they have to deal with civilians constantly. Barring deployment in a proxy war situation and counter-terrorist operations in areas like Kashmir and the north-east or anti-naxal operations, the requirements of CAPFs are somewhat different from that of the military,” a scientist said.

“Even within CAPFs, the role of border guarding forces is different from law enforcement. While dealing with civilians on our own side, they are also constantly face to face with a trained hostile force and the risks are high. The recent stand-off with China in eastern Ladakh and regular firing and shelling by Pakistan along the border in Jammu and Kashmir are examples,” he added.

According to a senior officer, the volatile operational conditions along the borders and increasing mandate of CAPFs in anti-terrorist operations as well as internal security duties called for a review of the recruitment process and training. “It was sometimes in mid-2021 that the matter was discussed between the Ministry of Home Affairs, Union Public Service Commission and the Department of personnel and Training and it was decided to introduce psychological test for CAPFs on the same lines as the Services Selection Boards (SSB) do it

for the armed forces,” he said. “However, it is still to be decided as to who will conduct the tests and at what stage of the recruitment process will these be introduced,” he added.

<https://www.tribuneindia.com/news/nation/drdo-begins-work-on-psychological-tests-for-recruiting-officers-in-paramilitary-forces-377476>



Sun, 13 Mar 2022

Big Milestone’ For India’s AMCA Stealth Fighter Jet Program as DRDO Announces Testing Of Fifth-Gen Technology

India is getting closer to realizing its dream of developing its own fifth-generation combat aircraft with its consistent push for self-reliance. The much-touted AMCA stealth fighter jet program, which has until now been on the drawing board, is now getting ready to enter the production stage.

In a landmark development, India’s Defence Research and Development Organisation (DRDO) recently took to Twitter to announce the proverbial ‘metal cutting’ for the first prototype of India’s next-generation fighter jet, the Advanced Medium Combat Aircraft (AMCA). The official handle of DRDO tweeted: “Based on the design by ADA & DRDO, the fabrication of Leading edge of AMCA initiated at HAL with special material for 5th gen design. The unit will undergo structural & other testing before putting it on the first prototype. An imp milestone for AMCA.”

Earlier, the Director-General of Aeronautical Development Agency (ADA), Girish S. Deodhare had revealed that the configuration of the prototype was frozen, the preliminary service quality requirements (PSQR) were finalized, and the preliminary design review was complete. The Critical Design Review (CDR) is due later this year.

The maiden flight of the AMCA is scheduled for 2024-25, with series production beginning in 2030, while the development agency believes that after four years of flight testing, the period can be shortened to 2028-29. In February this year, R Madhavan, chairman of the state-owned HAL had said that the company was employing a special purpose vehicle (SPV) model with private partners to produce the next-generation AMCA and Indian Multi-Role Helicopter (IMRH).

While HAL and ADA will handle the design and development, commercial defense companies could be involved in the production of the combat jet. The advanced stealth fighter will be a multi-role fighter capable of air dominance, ground strike, enemy air defense suppression, and electronic warfare tasks.

AMCA – India’s Futuristic Fighter Jet

The AMCA is envisioned as a twin-engine stealth aircraft with an internal weapons bay and Diverter-less Supersonic Intake, which has been produced for the first time and for which the

design is now complete. It will be a 25-tonne aircraft with an internal payload of 1,500 kg and an exterior payload of 5,500 kg in addition to 6,500 kg of internal fuel.

The Indian Air Force is said to have ordered 40 AMCA Mk-1 fighters and at least 100 Mk-2 derivatives, as well as some unmanned variants. The Advanced Medium Combat Aircraft (AMCA) would be stealthy and have 'super cruise' capabilities.

AMCA will assure India's entry into the elite club of countries with fifth-generation stealth planes. Only the F-35 and F-22 Raptors from the United States, the Su-57 Felon from Russia, and the J-20 from China are operational fifth-generation aircraft as of now.

With AMCA, India looks set to become only the fourth country to launch an indigenously produced stealth fighter aircraft. However, Turkey is also aggressively pursuing its own fifth-generation aircraft, known as the TF-X, that shares almost the same timeline of launch as Indian AMCA. Then South Korea (KF-21) and the European nations (Tempest and FCAS) are also developing fifth-gen fighter jets.

For the IAF, which has only 30-32 fighter squadrons as of now, the AMCA program is crucial. The service will not be able to attain the sanctioned size of 42 squadrons in the next 10-15 years, despite the 36 Rafale planes built in France as previously stated by then Air Chief Marshal VR Chaudhari. Besides the AMCA, India is also evaluating its options to procure 112 combat aircraft under the MRFA project to boost its fleet. The EurAsian Times carried out an elaborate survey on the MRFA project that could be accessed here.

The Heart Of The AMCA The AMCA will be available in stealth and non-stealth variants and, will be produced in two stages: an AMCA MK1 with an existing GE414 afterburning turbofan engine that powers LCA Tejas, and AMCA Mk2 with a new, more powerful engine that will be collaboratively developed with a foreign player, according to ADA chief Girish Deodhare.

Further, India and France are nearing a deal to collaborate on the development of a 125kN engine for the Advanced Medium Combat Aircraft (AMCA). The Defence Research and Development Organisation (DRDO) and Safran, a French engine manufacturer are expected to jointly produce the advanced AMCA engine.

Safran and HAL already collaborate on the Shakti engine, which powers the indigenous Advanced Light Helicopter Dhruv and its variants, thus a future deal for AMCA engine between the two could be expected to be smooth.

Officials claimed that once the agreement with France is completed, the aircraft and engine development will run concurrently in order to satisfy the timeframes.

The progress in the AMCA program would mark a major shift for India which stares as a shortage of combat aircraft against the requisite strength along with an aggressive neighbor at its doorstep.

<https://eurasianimes.com/amca-stealth-fighter-jet-program-as-drdo-fifth-gen-tech/>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Sat, 12 Mar 2022 6:16 PM

भारत और चीन के बीच कोर कमांडर स्तर की 15वें दौर की बैठक पर संयुक्त प्रेस विज्ञप्ति

भारत और चीन के बीच कोर कमांडर स्तर की 15वें दौर की बैठक 11 मार्च, 2022 को भारत की तरफ चुशुलमोल्दो सीमा बैठक स्थल पर आयोजित की गई थी। दोनों पक्षों ने पश्चिमी क्षेत्र में वास्तविक नियंत्रण रेखा से संबंधित मुद्दों के समाधान के लिए 12 जनवरी, 2022 को आयोजित हुई पिछले दौर की वार्ता को आगे बढ़ाया। शेष मुद्दों के जल्द से जल्द समाधान हेतु कार्य करने के लिए राष्ट्रीय नेताओं द्वारा दिए गए मार्गदर्शन को ध्यान में रखते हुए इस संबंध में उनके बीच विचारों का विस्तृत आदान-प्रदान हुआ।

दोनों पक्षों ने इस बात की फिर से पुष्टि की है कि इस तरह के प्रस्ताव से पश्चिमी क्षेत्र में वास्तविक नियंत्रण रेखा पर शांति और सद्भाव समझौता बहाल करने में मदद मिलेगी तथा द्विपक्षीय संबंधों में प्रगति की सुविधा प्राप्त होगी।

दोनों पक्ष पश्चिमी क्षेत्र में जमीनी स्तर पर सुरक्षा और स्थिरता को अंतरिम रूप से बनाए रखने पर भी सहमत हुए। वे जल्द से जल्द शेष मुद्दों के पारस्परिक रूप से स्वीकार्य समाधान तक पहुंचने के लिए सैन्य एवं राजनयिक चैनलों के माध्यम से बातचीत जारी रखने पर राजामंद हुए।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1805405>



Ministry of Defence

Sat, 12 Mar 2022 6:16 PM

Joint Press Release of the 15th Round of China-India Corps Commander Level Meeting

The 15th round China-India Corps Commander Level Meeting was held at Chushul-Moldo border meeting point on the Indian side on 11th March 2022. The two sides carried forward their discussions from the previous round held on 12th January 2022 for the resolution of the relevant issues along the LAC in the Western Sector. They had a detailed exchange of views in this regard, in keeping with the guidance provided by the State Leaders to work for the resolution of the remaining issues at the earliest.

They reaffirmed that such a resolution would help restore peace and tranquility along the LAC in the Western Sector and facilitate progress in bilateral relations.

The two sides also agreed to maintain the security and stability on the ground in the Western Sector in the interim. They agreed to maintain dialogue via military and diplomatic channels to reach a mutually acceptable resolution of the remaining issues at the earliest.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1805371>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Sun, 13 Mar 2022 2:00 PM

सेना प्रमुख ने राष्ट्रीय भारतीय सैन्य महाविद्यालय को उसके शताब्दी संस्थापना दिवस पर बधाई दी

देहरादून स्थित राष्ट्रीय भारतीय सैन्य महाविद्यालय (आरआईएमसी) 13 मार्च, 2022 को अपनी शताब्दी संस्थापना दिवस मना रहा है। सेना प्रमुख जनरल एम एम नरवणे ने एक संदेश में संस्थान को बधाई दी तथा पिछले सौ वर्षों में राष्ट्र की सेवा में आरआईएमसी तथा इसके पूर्व छात्रों के अपूर्व योगदान की सराहना की। उन्होंने कोविड महामारी के दौरान संस्थान को पूरी तरह खुला तथा कार्यशील रखने पर महाविद्यालय के कर्मचारियों को भी बधाई दी। सेना प्रमुख ने कैडेट से भविष्य की नेतृत्व भूमिकाओं तथा प्रौद्योगिकी में तेज बदलावों के कारण आने वाली चुनौतियों के लिए तैयारी

करने की अपील की। सेना प्रमुख ने इस सम्मानित संस्थान से जुड़ने वाली महिला कैडेटों का स्वागत तथा उन्हें समेकित करने के लिए महाविद्यालय द्वारा की गई तैयारियों पर संतोष जताते हुए कहा, 'इस महाविद्यालय से लड़कियों का जुड़ना इसके लिए अभूतपूर्व क्षण होगा'।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1805530>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 13 Mar 2022 2:00 PM

Army Chief Compliments The Rashtriya Indian Military College On Its Centennial Founders' Day

The Rashtriya Indian Military College (RIMC), Dehradun is celebrating its centennial Founder's Day on 13 March 2022.

In a message to the institution, Gen MM Naravane, Chief of Army Staff complimented and acknowledged the stellar contribution of the RIMC and the Alumni in the service of the Nation for the last one hundred years. He also complimented the College staff for keeping the institution fully open and functional during the COVID pandemic.

The COAS urged Cadets to prepare for future leadership roles and challenges which will be shaped by rapid changes in technology.

Expressing confidence on the preparations made by the College to welcome and integrate girl cadets into the folds of the prestigious institution, the COAS remarked that "Girls joining the College would be its Centennial moment"

<https://pib.gov.in/PressReleasePage.aspx?PRID=1805505>

Business Standard

Sun, 13 Mar 2022

PM Modi takes overview of global tech use in defence sector in CCS meet

Prime Minister Narendra Modi chaired a Cabinet Committee on Security (CCS) meeting and took stock of global technology usage in the defence sector and also India's advances in the same, sources said. Prime Minister Narendra Modi on Sunday chaired a Cabinet Committee on Security (CCS) meeting and took stock of global technology usage in the defence sector and also India's advances in the same, sources said.

The sources said the Prime Minister emphasised on integrating the latest technology in India's security apparatus. According to sources, PM Modi reiterated that every effort must be made

to make India self-reliant in the defence sector so that it not only strengthens the country's security but also enhances economic growth.

The Prime Minister today chaired the CCS meeting to review security preparedness and the prevailing global scenario in the context of the ongoing conflict in Ukraine.

During the meeting, PM Modi was briefed on the latest developments and different aspects of India's security preparedness in the border areas as well as in the maritime and air domain.

The Prime Minister was also briefed on the latest developments in Ukraine, including the details of 'Operation Ganga' to evacuate Indian nationals, along with some citizens of India's neighbouring countries, from Ukraine.

Prime Minister Modi directed that all possible efforts should be made to bring back the mortal remains of Naveen Shekharappa, who died in Kharkiv.

https://www.business-standard.com/article/current-affairs/pm-modi-takes-overview-of-global-tech-use-in-defence-sector-in-ccs-meet-122031300428_1.html



Sun, 13 Mar 2022

Indian Army's 'Heavy-Duty Contract' For Light Battle Tanks Intensifies as Foreign Firms 'Vie For The Pie'

The conflict that broke out in the summer of 2020 made the Indian Army cognizant of the urgent need for a lightweight tank, to be potentially deployed in Ladakh. To that end, a request for information (RFI) was issued last year by the Defense Ministry to purchase light tanks with a focus on mountain warfare. Recently, the Ministry of Defense (MoD) has given approval for the design and development of light battle tanks to the private sector to push the 'Atmabharat Bharat' (self-reliant India) initiative. The project, under the Make-1 category, is to be undertaken by industry and funded by the government in a stark departure from the idea of direct purchase. Foreign defense contractors with existing ties with the Indian military have already declared their intent to offer a tank to meet the Army's needs. As a result, a deal between a local and international defense contractor for collaboration on the design and development of the tank could be struck in the near future.

The Need For A Light Battle Tank

India had stationed a fleet of T-90 tanks, which weigh roughly 46 tons, near the site of conflict in eastern Ladakh. This was in addition to the previously deployed 45-ton T-72 tanks. However, these heavy tanks are not ideal for high altitudes and difficult topography.

While Indian armored battalions struggled to transport their heavy T-72s across mountain passes as high as 17,500 feet, China's ZTQ-15 light tanks effortlessly zipped through. The operational difficulties associated with using heavy main battle tanks (MBTs) in mountain warfare have pushed India's light tank program.

Depending on the armor arrangement, the Chinese Type 15 tank weighs roughly 33-36 tons. The tank is characterized by its high mobility and rapid redeployment and it was primarily designed for reconnaissance and infantry support missions.

It can be airdropped in areas such as in the mountains, jungles, and riverine areas where bigger Chinese MBTs cannot operate. Light tanks are beneficial not only on the high-altitude Sino-Indian border but also on the mountain frontier with Pakistan in J&K, according to an article written by Col. Ajai Shukla (retired), a leading defense analyst.

India filed an RFI for 350 light tanks last year, asking for potential manufacturers to meet the army's long-standing requirement that included a tank that is amphibious, transportable by air, road, and water, has a maximum weight of 25 tons, cutting-edge mobility, lethal armament, and protection systems, and can operate in a variety of terrain, including high-altitude environments.

BAE Systems

BAE Systems Hägglunds recently announced that it believes it can supply a single baseline platform that can meet the Indian Army's varied needs.

The CV90 family of armored fighting vehicles (AFVs) can meet the Indian Army's light tank, Futuristic Infantry Combat Vehicle (FICV), and Future Ready Combat Vehicle (FRCV) requirements, according to Darren Restarick, region sales director for BAE Systems Hägglunds, according to Janes.

Restarick went on to say that using the same platform for three requirements, with the ability to add or subtract armor and modify turrets, will increase attrition capabilities. Depending on the current needs, the operator can "regenerate the product".

The BAE offer is attractive as alongside the lightweight tank project, which is to be built indigenously now, India is also pursuing the FICV and FCRV projects, with the latter aimed at replacing the Russian developed T-72 and T-90, currently serving as India's Main Battle tanks. The CV90120-T is a light tank of the BAE CV-90 family with a Hägglunds turret set on a CV90 chassis from the current generation. It comes with CTG 120/L50, a completely stabilized 120mm high-pressure smoothbore gun with a rate of fire of up to 14 rounds per minute. The battlefield management system for the tank is built on a video network with displays at each crew station and is fully integrated, scalable, and open electronic architecture.

The tank's defensive assistance suite (DAS) includes laser, radar, and missile approach warning systems, as well as an MSA (multispectral aerosols) active countermeasure system with top attack radar that can identify smart indirect munitions. Furthermore, the stealth turret design and radar-absorbing track skirts add to its survivability.

Hanwha Defence

Larsen & Toubro (L&T), an Indian military company, is apparently working with South Korean defense company Hanwha Defense to create light tanks for the Indian Army.

The two companies previously collaborated on the K9 Vajra-T self-propelled howitzer (SPH), a variant of the K9 Thunder, for the Indian Army. Last month, an L&T spokesperson said the company plans to work with Hanwha Defense on the development of light tanks, as previously reported by the EurAsian Times.

Larsen & Toubro and the state-run DRDO are also reportedly in talks to convert the K9 Vajra SPH into a light – or medium-weight tank. The Indian Army is also planning to acquire 200

additional K9 Vajra Howitzers after their successful deployment in Ladakh. According to reports, the order might be placed this year, with deliveries beginning in 2023.

The K21-105 is based on the K21 infantry fighting vehicle and is equipped with a 105mm rifled gun turret that can fire both regular NATO and newly created smart ammunition with a maximum direct fire range of 4 kilometers. The vehicle, which weighs roughly 25 tons and has improved mobility, is cheaper and easier to manufacture. Additionally, the K21-105 is an amphibious armored vehicle, which the Indian Army appears to prefer. This allows armored columns to cover natural barriers such as rivers or lakes, enhancing overall combat efficiency.

Russian Sprut-SDM1

Before the Indian government decided to indigenously develop the light tanks, it was looking at several options to buy from a foreign partner. The Russian Sprut tanks had particularly evoked keen interest in India.

During Indian Defense Minister Rajnath Singh's visit to Moscow in August 2020, Russia offered India the Sprut-SDM1. Singh had spoken about India's need for lightweight tanks and was able to convince Russia to allow it to participate in the tank's trials, as previously reported by the EurAsian Times.

The Sprut comes with all it needs to be an all-weather, all-terrain tank. This amphibious tank can be utilized by both marines and land forces due to its excellent combat performance and capabilities. Sprut-SDM1 can fire guided missiles and is equipped with a powerful weapon package that includes a 125mm gun, a 7.62mm remote-controlled machine gun, and a 7.62mm coaxial machine gun. The tank's onboard guided missile weapon system can hit armored targets up to 5 kilometers distant, including those with explosive reactive armor (ERA), while the roof-mounted machine gun can take down low-flying helicopters.

The Sprut can go 500 kilometers without refueling and can be transported by military cargo planes, landing ships, or by parachuting with a crew.

In any case, even if India had not decided to develop a tank indigenously, buying the Russian Sprut could have posed several problems due to the sanctions imposed on the Russian defense industry over its invasion of Ukraine. Indian defense experts have already expressed concern about existing deals and deliveries.

That said, the Indian Army's project could see more foreign contractors offering to collaborate with the country's industry in the design and production of lightweight tanks.

<https://eurasianimes.com/indian-armys-heavy-duty-contract-for-light-battle-tanks-intensifies-china/>

THE HINDU
BusinessLine

Sun, 13 Mar 2022

18 military platforms to be designed and developed by domestic Defence industry: govt

The Defence Ministry on Friday said that 18 major platforms including naval ship-borne unmanned aerial systems and lightweight tanks were identified for their design and

development by the private sector. The move is part of the ministry's larger goal of boosting the domestic defence industry. Apart from the ship-borne unmanned aerial systems and lightweight tanks, the other key platforms to be developed under the initiative are: hypersonic glide vehicle, unmanned autonomous AI-based land robot, 127 mm naval gun, electric propulsion (engines) for ships and standoff airborne jammer.

The ministry said 18 major platforms have been identified for industry-led design and development in sync with the government's focus on promoting self-reliance in defence manufacturing. According to the defence ministry, 14 platforms are being developed by the private sector under the 'Make-I' category of the Defence Acquisition Procedure (DAP) 2020.

The DAP said 'Make-I' category aims to achieve self-reliance by involving greater participation of the Indian industry for the development of defence equipment.

Two platforms are planned to be developed under the Special Purpose Vehicle (SPV) model, the ministry said in a statement.

Under the SPV model, private industries are being encouraged to take up the design and development of military platforms and equipment in collaboration with the Defence Research and Development Organisation (DRDO) and other organisations. The platforms identified for development under the SPV model are Long Range Unmanned Aerial Vehicles (UAVs) and Indian Multi-Role Helicopter (IMRH). A platform called Low Orbit Pseudo Satellites will be developed under the iDEX programme which is an initiative to promote start-ups and MSMEs.

The ministry said anti-jamming systems for multiple platforms are being developed under 'Make-II' category. The projects under 'Make-II' category are funded by the industry with assured procurement by the government.

<https://www.thehindubusinessline.com/news/national/18-military-platforms-to-be-designed-and-developed-by-domestic-defence-industry-govt/article65216973.ece>



Mon, 14 Mar 2022

Pakistan Will Get 'J-20c' Stealth Fighter, Says Interior Minister Sheikh Rasheed Ahmed

Some media outlets reported last week that the first batch of a new type of fighter aircraft, the J-10C, had arrived in Pakistan. Designed and built in China, the J-10C is a single-engine aircraft similar in size and capability to the US F-16.

According to reports, Pakistan will get 25 J-10C fighters from China and the aircraft will fly in a military parade on Pakistan Day (March 23). The J-10C is an export variant of the Chinese J-10 fighter.

Rumours and occasional reports of a purchase of the J-10 by Pakistan had surfaced repeatedly for over a decade. However, in late December last year, Interior Minister Sheikh Rasheed

Ahmed became the first senior Pakistani official to confirm the purchase of the J-10C. At the time, Rasheed had told media persons Pakistan was buying the J-10C to counter India's acquisition of the Rafale fighters from France.

But Pakistan is looking beyond the J-10C. Speaking at a press conference on Monday, Rasheed confirmed that the J-10C jets had arrived in Pakistan and would fly at the March 23 parade. "We have the J-10C... God willing, a time will come... I am not sure when, the J-20C will also come to Pakistan, which will be the most modern aircraft in the world..."

Rasheed did not give more details. He appeared to be referring to a variant of China's J-20 stealth fighter. The J-20 first flew in 2011 and is the only stealth fighter in service with China's air force. Over the past decade, there have been claims Pakistan could be a prospective buyer of the J-31 stealth fighter that is being developed by China. The J-20 is larger in size and is believed to have greater range and weapons carriage capability than the J-31 fighter, which is yet to enter service.

The J-20 is considered a long-range aircraft capable of both destroying enemy aircraft and attacking targets on the surface.

Given Pakistan's perilous financial situation, it is unclear how the country can afford stealth aircraft. Interestingly, the claims by Rasheed came weeks after Pakistani and Turkish officials had hinted the two countries were cooperating on development of a stealth fighter.

<http://www.indiandefensenews.in/2022/03/pakistan-will-get-j-20c-stealth-fighter.html>

THE ECONOMIC TIMES

Sat, 12 Mar 2022

Defence Ministry earmarks copters, UAVs, laser weapons for industry-led design, development

The defence ministry has earmarked several major projects that would be led by the private industry, marking another shift towards reducing dependency on state-owned entities for design and development of new weapon systems. The projects include futuristic technologies like high-powered laser weapons, hypersonic glide vehicles, electric propulsion for warships and even a mega project to develop a new medium lift helicopter for the armed forces. The move comes after it was announced that 25% of the defence ministry's research and development budget would be earmarked for the private industry and startups, which can collaborate with state-owned entities on new projects. "The indigenous development of these projects will help harness the design capabilities of the domestic defence industry and position India as a design leader in these technologies," defence ministry officials said. Interestingly, 14 of these projects have been categorised under the 'Make 1' procedure, where the government can fund up to 70% of the developmental costs, with an assurance that the system could be inducted in pre-determined quantities if all technical specifications were met. This includes development of a new 127 mm naval gun for frontline warships, an Artificial Intelligence enabled land robot, self-healing mine fields and airborne jammers. The defence ministry has already given approvals to initiate some of these projects, which includes a new light weight tank required by the Indian Army in high altitude areas. Also reflecting the new requirements of the armed forces, another project identified is for

'plug and play' housing and other infrastructure for soldiers posted at extreme altitude areas, the requirement of which was felt after thousands of troops had to be posted to the Line of Actual Control in eastern Ladakh in 2020.PV) model, the ministry has identified Long Range Unmanned Aerial Vehicles as well as the Indian Multi Role Helicopter which is already under development by Hindustan Aeronautics Limited.The project to develop a low orbit Pseudo satellite, a very high flying UAV with an endurance spanning into months for reconnaissance and communications, has been taken up under the ministry's iDEX initiative.

[Defence Ministry earmarks copters, UAVs, laser weapons for industry-led design, development - The Economic Times \(indiatimes.com\)](#)



Sun, 13 Mar 2022

Russia-Ukraine War To Affect India's Military Sustenance, Expansion

The war between Russia and Ukraine will cost India's military capabilities, but to what effect is what the government is looking upon. It will all depend on how long the war continues and what would be the outcome of the conflict. The war will set a new world order for arms procurement and bilateral military relationship. And repercussions of it will be felt in New Delhi. India gets more than 50 per cent of its arms and ammunition and military platforms requirements from Russia. Since Russia is at war, India's military capabilities will be affected dearly. Be it delivery of platforms like nuclear powered submarines, Grigorovich class frigates, fighter jets, Triumph S-400, AK 203 assault rifle and others or sustenance of tanks, aircraft and other platforms procured from Russia.

There are three critical aspects where India will face challenges due to war. Explaining those critical aspects, Major General Ashok Kumar (Retd) told IANS, "There are three critical aspects where India will face challenges -- the hard core military hardware including its support infrastructure; non direct military support and the equipment coming from Russia and the overall economic condition which will leave less funds with the military affecting modernization and upgradation."

The military preparedness depends on a number of issues - one is military hardware itself wherein more than 50 per cent of Indian equipment are of Russian origin. "So its maintenance, spare parts and other sustenance issues, even after indigenization, in some way will remain linked with the Russian support," Major General Ashok Kumar said.

Though India has been trying to diversify to other countries -France and the US -- and increasing its own in-house production, but still has to reach stages where the contribution of any particular country is less. As you diversify more, the challenges will also be enhanced in terms of maintenance and provision of the spares and ammunition, so on and so forth

For a nation, self reliance will be better that there is no major chunk from a particular block or a country. "Becoming self reliant in a fully fledged manner is reasonably high degree but all that will take time..," he said. "Since we are not very sure as to when the war is going to

end nor are we also sure in which manner it is going to end it is difficult to tell the impact of the war on India."

If it ends in an amicable manner the impact will be less. But if Russia occupies Ukraine, the fight continues and the sanctions will continue for a long time then there will be a lot of problems and challenges before India.

The second challenge will be indirect. In critical installations like satellites India is using some Russian components. "That will also be affected because the satellite in today's time also applied to get the input and surveillance about the enemy area, especially the Chinese," he said.

Third impact on the military will happen if the country's economic condition gets affected. If inflation goes up, there would be a number of issues. "Depending on in which direction the economy of the world goes, that will have an impact on the sustenance of the military expansion and its acquisition," Major General Ashok Kumar said. He also stated that the ongoing war between Russia and Ukraine and the sanctions imposed on Russia by Western and European Nations will delay the delivery of critical projects Indian armed forces were looking upon to enhance its capabilities.

India decided to upgrade its military infrastructure when the country was locked in a major face-off with China along the Line of Actual Control in July 2020. The threat of two-front war - from China and Pakistan - has made India go for large scale arms deals.

Last week, India's defence ministry reviewed the status of current deals with Russia and how the war is going to impact the Indian military capabilities. However both India and Russia maintained there would be no delays with respect to deliveries of critical platforms.

In December 2021, India and Russia signed more than two dozen deals across a variety of sectors and had also inked a 10-year defence cooperation pact.

Back then in a joint statement India and Russia had stated they intend to "upgrade the defence cooperation, including facilitating joint development and production of military equipment, components and spare parts, enhancing the after-sales service system, progress towards mutual recognition of quality control and regular joint exercises of the Armed Forces of the two countries."

Triumf S-400

One of the deals with Russia is the Triumf S-400 air defence system. India signed a \$5 billion deal with Russia in October 2018 to buy five units of the S-400 surface to air missile system. Russia has stated that it will deliver on time, however, the war will delay the same. S-400 air defence system is a mobile long range surface to air missile system which is considered one of the most lethal in the world. It can take down multiple targets up to a range of 400 km.

AK-203 Assault Rifle

The Indian Army had also inked a deal with Russia to jointly develop the AK 203 assault rifle worth Rs 5,000 crore. The production of 6.71 lakh AK 203 rifles in Korwa, Amethi in Uttar Pradesh as part of a joint venture with Russia under the 'Make in India' project will face further delays despite the deal having faced hurdles and delays earlier.

Nuclear-Powered Submarine

In 2019, India signed a \$3 billion deal with Russia for leasing a nuclear-powered submarine. The Chakra-III, Akula class submarine is expected to be delivered by 2025 for a period of 10 years. This will be the third nuclear submarine India will take on lease from Russia, the other two being in 1988 for a period of three years and then in 2012 for 10 years. The lease for this will end this year.

Grigorovich Class Frigates

The deal to get four Grigorovich class frigates was signed between Russia's state-run arms exporter Rosoboronexport and Goa Shipyard Ltd in 2018. Two frigates for the Indian Navy worth \$1 billion were to be manufactured in Russia and the other two in Goa. The delivery was supposed to start within four years of signing of the contract.

MiG-29 Up-Gradation

The arms and ammunition deals with Russia also includes procurement of additional 21 MiG-29 for the Indian Air Force (IAF), up-gradation of existing 59 MiG-29 aircraft at an estimated cost of Rs 7,418 crore and purchase of 12 Su-30MKI aircraft for Rs 10,730 crore to be built at state-owned Hindustan Aeronautics Limited (HAL).

<http://www.indiandefensenews.in/2022/03/russia-ukraine-war-to-affect-indias.html>

Science & Technology News



Sun, 13 Mar 2022

India on Way To Become Leader In Space Tech: Science & Tech Minister Jitendra Singh

Union minister Jitendra Singh on Saturday said that ascent of India to the front ranking nations has already begun with its thriving space adventures. He said that credit for this success goes “entirely” to Prime Minister Narendra Modi who unlocked space technology to private players.

“The ascent of India as a frontline nation of the world has already started through the medium of space. The next 25 years from here will be crucial for the country as said by the Prime Minister,” the Science & Technology minister said.

“The credit entirely goes to Prime Minister for unlocking space technology and opening it to private players,” he said. Singh was addressing a conference on ‘Frontiers of Space Technology and Applications for Humanity’ at the Central University of Jammu, where he also inaugurated north India’s first-ever space centre.

“India is entering into an era when it is going to play a pivotal role in space technology with India already having taken a lead in the world as far as space technology is concerned.” He said India is earning millions in Euros and US dollars through launching of foreign satellites.

Singh cited the example of the SAARC satellite — that caters to needs of most of the neighbouring countries including Bangladesh, Bhutan, Sri Lanka, and Nepal — as a successful example of space collaboration.

He also said the satellite was “visualised and developed” on instructions of the Prime Minister.

He said that space technology for the last 70 years has been confined to South Indian states of Andhra Pradesh, Karnataka, and Kerala, which was an anomaly. “This government is steadfast to take space technology to the remote corners of the country which is evident today with the inauguration of Satish Dhawan Centre for Space Sciences at Central University of Jammu and another Space Centre has already been established at Agartala, Tripura, with the support of Prime Minister of India who is himself a space technology enthusiast,” he said.

Singh said the space technology in the country is advanced to the stage that such premier space institutes as NASA request for footages of many space adventures captured by the ISRO.

The Minister said the level of importance this government gives to the space technology is evident in such results as the discovery of water by Chandrayaan, which could not be done even by nations with advanced space programmes. It showed that India has already taken a lead in the field of space exploration, he said.

Singh stressed that the Jammu space centre will serve as an institution for forging of start-ups in space technology. He called on people of the region to use this “enormous opportunity” to shape their future and get rid of the habit of depending on a government job.

He said his ministry will launch start-up-related awareness programmes across the country from next month. The minister said that ever since Modi has taken over as Prime Minister, space technology is being applied in diverse sectors for “ease of living” for common man.

“Space and satellite technology is today being extensively used in railways, road and bridge construction, agriculture, soils, water resources, forestry and ecology, housing, tele-medicine, disaster management and accurate weather forecast to name a few,” Singh said.

ISRO Chairman Somnath S said space technology now is an integral part of life, and that safety and security of the nation will depend on how strong it is going to be in the space sector.

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going to play a pivotal role in space technology with India already having taken a lead in the world as far as space technology is concerned.” He said India is earning millions in Euros and US dollars through launching of foreign satellites. Singh cited the example of the SAARC satellite — that caters to needs of most of the neighbouring countries including Bangladesh, Bhutan, Sri Lanka, and Nepal — as a successful example of space collaboration.

He also said the satellite was “visualised and developed” on instructions of the Prime Minister. He said that space technology for the last 70 years has been confined to South Indian states of Andhra Pradesh, Karnataka, and Kerala, which was an anomaly.

“This government is steadfast to take space technology to the remote corners of the country which is evident today with the inauguration of Satish Dhawan Centre for Space Sciences at Central University of Jammu and another Space Centre has already been established at Agartala, Tripura, with the support of Prime Minister of India who is himself a space technology enthusiast,” he said. Singh said the space technology in the country is advanced to the stage that such premier space institutes as NASA request for footages of many space adventures captured by the ISRO.

The Minister said the level of importance this government gives to the space technology is evident in such results as the discovery of water by Chandrayaan, which could not be done even by nations with advanced space programmes. It showed that India has already taken a lead in the field of space exploration, he said. Singh stressed that the Jammu space centre will serve as an institution for forging of start-ups in space technology. He called on people of the region to use this “enormous opportunity” to shape their future and get rid of the habit of depending on a government job. He said his ministry will launch start-up-related awareness programmes across the country from next month.

The minister said that ever since Modi has taken over as Prime Minister, space technology is being applied in diverse sectors for “ease of living” for common man. “Space and satellite technology is today being extensively used in railways, road and bridge construction, agriculture, soils, water resources, forestry and ecology, housing, tele-medicine, disaster management and accurate weather forecast to name a few,” Singh said.

ISRO Chairman Somnath S said space technology now is an integral part of life, and that safety and security of the nation will depend on how strong it is going to be in the space sector.

<http://www.indiandefensenews.in/2022/03/india-on-way-to-become-leader-in-space.html>

THE TIMES OF INDIA

Sun, 13 Mar 2022

India, Canada to set up bilateral hub to boost science & tech activities

A bilateral centre will soon be set up for dedicated science and technology activities between India and Canada. Welcoming a Canadian delegation on Friday, Union science and technology (S&T) minister Jitendra Singh said renewal of two MoUs between India and Canada is proposed to be signed in the upcoming joint committee meeting in May. The first

MoU relates to National Science Engineering Research Centre, Canada, and it is a project-based scientific exchange programme along with the development of human resource in basic and applied sciences of direct relevance to society. The second agreement relates to the National Research Council (NRC), Canada, and it is an industrial R&D project-based scientific collaboration.

Informing about the bilateral centre with Canada, Singh said India has already established a few bilateral centres with other countries like US, Germany and France that are dedicatedly working on various useful S&T schemes between partner countries.

The Canadian delegation led by its minister of international trade, export promotion, small business and economic development Mary Ng reviewed the progress of bilateral cooperation with Singh in several key areas, including green technologies, advanced engineering and manufacturing, agriculture and food technologies, digital transformation, energy conservation and healthcare. Discussions are on to finalise possible terms and conditions for the cooperation.

Singh said that the future economy is premised on high quality research and innovation, and invited Canada to tap the unexplored areas like ocean and sea missions in India.

He said CSIR is keen to develop research collaborations with Canadian R&D institutions. He also called for more youth exchange programmes between India and Canada and joint startups in key areas of research. Singh said the S&T department has also been supporting industrial R&D projects with Canada, which have potential for application. Total 10 projects have been supported for industrial R&D till now. Mary Ng expressed a desire to also deepen cooperation in areas like bio-technology, renewable energy and climate change through applied research mode.

<https://timesofindia.indiatimes.com/india/india-canada-to-set-up-bilateral-hub-to-boost-science-tech-activities/articleshow/90178249.cms>



Sun, 13 Mar 2022

North India's First centre for Space Science Inaugurated: A march of Space Journey from Kerala to Kashmir

Asserting it as a “historic decision & a historical day” in furthering the strength of science in the nation, Union Minister of State for Science & Technology Dr Jitendra Singh inaugurated North India's first-ever Space Centre in Jammu. Satish Dhawan Centre for Space Science at the Central University of Jammu, this year will offer the first course – B.Tech in Aviation and Aeronautics, with an intake capacity of 60 students.

It has come to the notice that most space technology institutes were in the past confined to the Southern States and the only-of-its-kind Indian Institute of Space and Technology imparting Engineering, Aeronautics and other streams were located in Thiruvananthapuram.

“Most of the Space Technology from the last seventy years has been confirmed to South India mostly to the states of Andhra Pradesh, Karnataka, Kerala which was an anomaly in the

spread of the space technology in the country. The government is steadfast to take space technology to the remote corners of the country which is evident today with the inauguration of the Satish Dhawan Centre for Space Sciences at the Central University of Jammu,” Union Minister Dr Jitendra Singh said.

According to the Science & Technology Minister, the opening of the Space Centre and India’s second-of-its kind Space Training Institutes in Jammu & Kashmir in 75th years of independence simultaneously marks the march of space journey from Kerala to Kashmir.

The Indian Space Agency – ISRO, in October 2018, had signed a Memorandum of Understanding (MoU) with the Central University of Jammu to set up the centre with facilities for geospatial data analysis, that will aid in sustainable use of natural resources and plan land-use patterns. The newly-inaugurated centre has ground-based observations for atmospheric studies, a research lab for astrophysics, atmospheric sensing and glacier studies lab for better use of large quantities of water stored in the form of seasonal snow, ice and glaciers in the rivers of North India.

According to Dr Singh, the future of the world will hugely depend on three things – Space Economy, Space Collaboration and Space Diplomacy. Referring to the space economy, he mentioned that India is already receiving revenue worth millions of European Euros and US Dollars through the launching of foreign satellites. Referring to space collaboration, he cited the example of the SAARC satellite which was visualised and developed on the instructions of Prime Minister Narendra Modi, which caters to the needs of most of the neighbouring countries including Bangladesh, Bhutan, Sri Lanka, Nepal, etc.

Addressing the conference on ‘Frontiers of Space Technology and Applications for Humanity’ at CUJ, Dr Singh stressed that with the inauguration of Satish Dhawan Centre for Space Science at the Central University of Jammu, this institute would be an institution for startups in space technology as well, especially in J&K. The Minister said that the people from this region should use this enormous opportunity to shape their future. Dr Singh added that the Ministry of Science and Technology will start the awareness programs related to Startups across the country from the next month.

<https://newsonair.com/2022/03/13/north-indias-first-centre-for-space-science-inaugurated-a-march-of-space-journey-from-kerala-to-kashmir/>

