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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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अमरउजाला

Sun, 27 Mar 2022

भारतीय सेना: सतह से हवा में मार करने वाली मध्यम दूरी की दो मिसाइलों का सफल परीक्षण, एमआरएसएएम ने लक्ष्यों को पूरी तरह से नष्ट किया

भारत ने रविवार को सतह से हवा में मार करने वाली मध्यम दूरी की दो मिसाइलों (एमआरएसएएम) का सफल परीक्षण किया। सेना के लिए तैयार इन मिसाइलों को ओडिशा के चांदीपुर स्थित एकीकृत परीक्षण रेंज (आईटीआर) से सुबह 10.30 बजे दागा गया। रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के सूत्रों ने बताया कि यह उड़ान परीक्षण उच्च गति वाले हवाई लक्ष्य के खिलाफ लाइव फायरिंग ट्रायलों का हिस्सा है। उन्होंने बताया कि दोनों मिसाइलों ने लक्ष्यों को रास्ते में ही रोकर पूरी तरह से नष्ट कर दिया। पहली मिसाइल ने मध्यम ऊंचाई पर लंबी दूरी के लक्ष्य को निशाना बनाया जबकि दूसरी ने कम ऊंचाई पर कम दूरी को। सतह से हवा में मार करने वाली एमआरएसएएम संस्करण वाली मिसाइल को डीआरडीओ और इस्राइली एयरोस्पेस इंडस्ट्रीज (आईएआई) ने तैयार किया है। इसे सेना के इस्तेमाल के लिए बनाया गया है। एमआरएसएएम सैन्य हथियार प्रणाली में मल्टीफंक्शन राडार, मोबाइल लांचर प्रणाली और अन्य व्हीकल शामिल है। सुपुर्दगी योग्य इन दोनों मिसाइलों की उड़ान परीक्षण हथियार प्रणाली के साथ किया गया। परीक्षण के दौरान डीआरडीओ और सेना के वरिष्ठ अधिकारी भी मौजूद थे।

रेंज आधा किलोमीटर से 100 किमी तक

सूत्रों का कहना है कि एमआरएसएएम की रेंज आधा किलोमीटर से लेकर 100 किलोमीटर तक हैं। एक बार छोड़े जाने के बाद यह आसमान में सीधे 16 किलोमीटर तक के लक्ष्य को गिरा सकती है। पिछले साल दिसंबर में इसका पहला परीक्षण किया गया था। यह बैलिस्टिक मिसाइलों, लड़ाकू जेट विमानों, विमानों, ड्रोन, निगरानी विमानों और एयरबोर्न वार्निंग एंड कंट्रोल सिस्टम विमानों को मार गिराने में सक्षम है।

रक्षामंत्री ने दी बधाई

रक्षामंत्री राजनाथ सिंह ने एमआरएसएएम के सफल परीक्षण पर डीआरडीओ, सेना और रक्षा इंडस्ट्री

को बधाई दी। उन्होंने कहा कि दोनों सफल परीक्षण अहम रेंज पर लक्ष्यों को भेदने की हथियार प्रणाली की क्षमता को दिखाते हैं।

तीन गांवों के 7000 लोगों को किया गया था शिफ्ट

डीआरडीओ के चेयरमैन जी सतीश रेड्डी ने उड़ान परीक्षण में शामिल टीमों को बधाई दी है। एहतियाती कदमों के तहत, बालासोर जिला प्रशासन ने आईटीआर के नजदीक स्थित तीन गांवों से 7000 लोगों को अस्थायी तौर पर सुरक्षित जगहों पर शिफ्ट किया था।

<https://www.amarujala.com/india-news/mrsam-drdo-successfully-carried-out-the-test-firing-of-the-medium-range-surface-to-air-missile-air-defence-system-off-the-coast-of-balasore-odisha>

Business Standard

Sun, 27 Mar 2022

DRDO successfully flight-tests Army's surface to air missile

The Defence Research and Development Organisation (DRDO) conducted two successful flight tests of the Indian Army's version of the Medium Range Surface to Air Missile (MRSAM) on Sunday.

The Defence Research and Development Organisation (DRDO) conducted two successful flight tests of the Indian Army's version of the Medium Range Surface to Air Missile (MRSAM) on Sunday. The tests, conducted at the Integrated Test Range, Chandipur, off the coast of Odisha, were carried out as part of the live firing trials against high-speed aerial targets. The first test was to intercept a medium-altitude, long-range target and the second against a low-altitude, short-range target. The missiles intercepted the targets and destroyed them completely, registering direct hits at both ranges.

Developed jointly by DRDO and the Israel Aerospace Industries (IAI), for use by the Indian Army, the MRSAM Army weapon system comprises multi-function radar, mobile launcher system, and other vehicles. The flight tests were carried out with the weapon system in deliverable configuration. The performance of the weapon system was validated through the flight data captured by range instruments like radars, electro-optical tracking systems and telemetry deployed by ITR, Chandipur. Senior officials from the DRDO and the Indian Army were present at the test site.

Defence Minister Rajnath Singh congratulated the DRDO, the Indian Army, and the industry for the successful flight tests of MRSAM-Army, saying both the successful tests establish the capability of the weapon system in intercepting targets at critical ranges.

Defence R&D Secretary and DRDO Chairman Dr G. Satheesh Reddy complimented the teams involved in the successful flight trials and termed these tests major milestones for 'Aatmanirbhar Bharat'.

https://www.business-standard.com/article/current-affairs/drdo-successfully-flight-tests-army-s-surface-to-air-missile-122032700567_1.html



Sun, 27 Mar 2022

Bend and aim: DRDO's corner-shot weapon gives police a critical eye

A corner-shot weapon system (CSWS) designed and developed by the Defence Research and Development Organisation (DRDO) is at an advanced stage of being inducted by the Central Reserve Police Force (CRPF) and the Jammu and Kashmir police. The CSWS is a special purpose weapon designed by the Armament Research and Development Establishment (ARDE), Pune. It can engage targets located around the corners as the system bends and captures video feed thus saving soldiers from any surprise counter attack and is best suited for urban, close quarter situations. "The development was completed in March 2019 and has since cleared user trials with various Central Armed Police Forces (CAPF).

Procurement by CRPF and J&K police is under advanced stage," a defence official said. The development began about a decade back. In July 2020, the DRDO transferred the technology to the Bharat Electronics Limited (BEL), Pune and the Zen Technologies Limited, Hyderabad, for production, the official said. A few systems were used in the recent India-Japan bilateral army exercise Dharma Guardian-2022 which concluded on March 10 at Belagavi in Karnataka.

Indian troops briefed the Japanese side on the system and both used it while practising room intervention to neutralise hostile elements. The CSWS is equipped with weapon, camera, laser, infrared illuminator and torch in front portion, while display, electronics, battery and swivelling mechanism are located at rear portion, the official said. The body is made from high-grade aluminium alloy to make it lighter and durable. Features like day night firing capability, colour display, digital zoom, zeroing facility, hot keys, high power battery along with status display and compliance with JSS 5855 makes it a very potent system for security forces engaged in Counter Insurgency and Counter Terror (CI/CT) operations, the official said. Many superior features This indigenously designed and developed system has many superior features compared to its contemporary international systems and available for 9 mm GLOCK 17/19 and 1A1 Auto Pistol variant, the official said. The industry has been part of the development phase which enabled them to absorb the technology better, one of the officials said emphasising on the effort to involve the domestic industry as part of the 'Atmanirbhar' initiative. The official said the prototypes during development and for the trials were produced by the two industries based on design given to them to ensure there are no gaps in manufacturing at a later stage.

"The technical trials are done and the system is fully ready. It is also a good option for export," the official said. In the aftermath of the 26/11 Mumbai terror attacks of 2008, both the National Security Guard (NSG) and the Army had projected requirement for corner shot weapons to equip their troops for urban warfare where security personnel get exposed while trying to locate or flush out terrorists. Both had then floated tenders for procuring them.

<https://idr.org/bend-and-aim-drdo-s-corner-shot-weapon-gives-police-a-critical-eye%ef%bf%bc/>



DRDO's bio-toilets disposing human waste in an eco-friendly manner

In India, where the terrain is of various categories, one problem remains the same. The problem of proper sewage network or sewage treatment. However, the central government has worked extensively in providing toilets to every household through its flagship program Swachh Bharat Abhiyan (SBA). Apart from this, DRDO's Bio toilet has also provided solid support in bringing down open defecation and providing an eco-friendly solution for disposing of human waste in the country.

Salient features of the DRDO's Bio Toilet

Human waste can be used eco-friendly if treated in a proper way. On similar lines, the DRDO's bio-toilet works and disposes of human waste in an eco-friendly manner. It makes use of an anaerobic (without oxygen) process through which the human waste is digested by a consortium of bacteria (A microbial consortium is two or more bacterial or microbial groups living symbiotically). The microbial consortium which is used to digest Human waste consists of four types of bacteria which are Hydrolase, Acidogenesis, Acitogenase and Methanogens. Further, cow dung is used for the enrichment of the bacterial consortium. The consortium of bacteria degrades organic waste into water and gasses and the biogas generated in the process can be harnessed.

The Bio-toilet has been customized and different designs have been developed for use under different geo-climatic conditions. It can be used in compact places to high altitudes and everything in between.

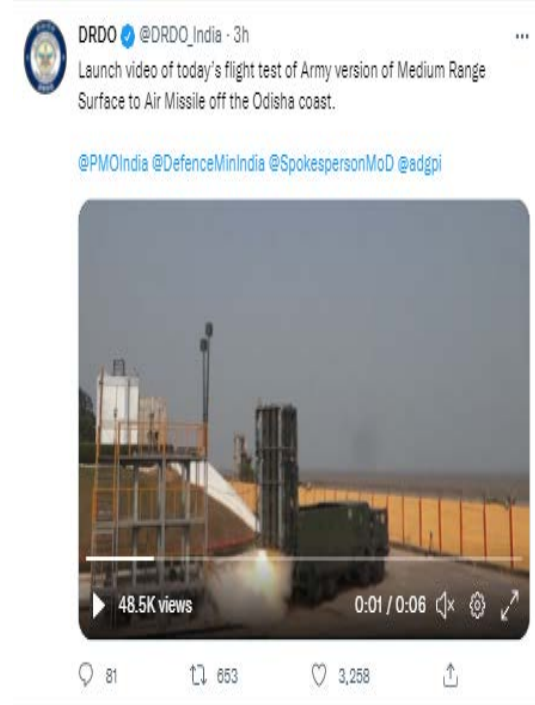
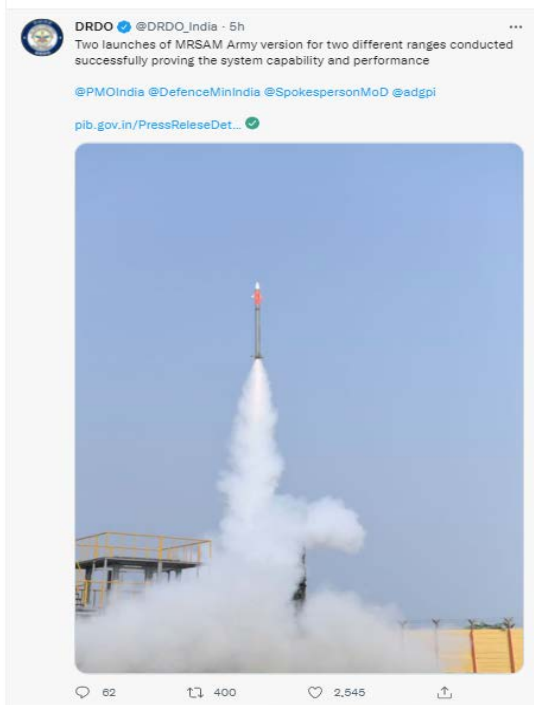
Other features are as follows:

- Smaller than conventional septic tank systems.
- A no-slurry system, thereby reducing maintenance (no manual scavenging/ cesspool emptying required).
- Reduced sewage load and pathogen.
- Secondary treatment of effluent water (use of Reed bed) for quality augmentation.
- Treated water can be reused for flushing, gardening etc.

DRDO has transferred this Bio Toilet technology to approximately 60 industries across India. These industries have installed bio-digesters across the country. A total number of about 16,000 bio-toilets have been installed in more than 20 states. In addition, more than 2.5 lakhs bio-toilets have been installed in Indian Railways coaches, which cater to the needs of more than 100 lakh passengers on a daily basis.

<https://newsonair.com/2022/03/26/drdo-bio-toilets-disposing-human-waste-in-an-eco-friendly-manner/>

DRDO On Twitter





पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Sat, 26 Mar 2022 3:12 PM

रक्षा मंत्रालय ने शैक्षणिक वर्ष 2022-2023 से साझेदारी मोड में 21 नए सैनिक स्कूलों को मंजूरी दी

रक्षा मंत्रालय ने गैर सरकारी संगठनों/निजी स्कूलों/राज्य सरकारों के साथ साझेदारी में 21 नए सैनिक स्कूलों की स्थापना को मंजूरी दी है। ये स्कूल देश भर में 100 नए सैनिक स्कूल पार्टनरशिप मोड में स्थापित करने की सरकार की पहल के शुरुआती दौर में स्थापित किए जाएंगे। वे विद्यमान सैनिक स्कूलों से अलग होंगे।

प्रधानमंत्री श्री नरेन्द्र मोदी के 100 नए सैनिक स्कूलों की स्थापना के विजन का उद्देश्य छात्रों को राष्ट्रीय शिक्षा नीति के अनुरूप गुणवत्तापूर्ण शिक्षा प्रदान करना और उन्हें सशस्त्र बलों में शामिल होने सहित करियर के बेहतर अवसर उपलब्ध कराना है। यह निजी क्षेत्र को आज के युवाओं को कल के जिम्मेदार नागरिक बनाने के लिए परिष्कृत करने के द्वारा राष्ट्र निर्माण की दिशा में सरकार के साथ मिलकर काम करने का अवसर भी प्रदान करता है।

21 अनुमोदित नए सैनिक स्कूलों की राज्य/संघ राज्य क्षेत्र-वार सूची संलग्न है और इसे www.sainikschool.ncog.gov.in पर भी देखा जा सकता है। इनमें से 17 स्कूल ब्राउनफील्ड संचालित स्कूल हैं और 4 ग्रीनफील्ड स्कूल हैं जो शीघ्र ही प्रचालनगत होने वाले हैं। जहां गैर सरकारी संगठनों/ट्रस्ट/सोसाइटियों के पास 12 अनुमोदित नए स्कूलों की हिस्सेदारी है, 6 निजी स्कूल और 3 राज्य सरकार के स्वामित्व वाले स्कूलों ने ऐसे अनुमोदित नए सैनिक स्कूलों की सूची में जगह पायी हैं। विद्यमान सैनिक स्कूलों के विपरीत, जो विशुद्ध रूप से आवासीय प्रकृति के हैं, 7 नए सैनिक स्कूल डे स्कूल हैं और ऐसे 14 नए अनुमोदित स्कूलों में आवासीय व्यवस्था है।

ये नए सैनिक स्कूल, संबंधित शिक्षा बोर्डों से संबद्धता के अतिरिक्त, सैनिक स्कूल सोसायटी के तत्वावधान में कार्य करेंगे और सोसायटी द्वारा निर्धारित साझेदारी मोड में नए सैनिक स्कूलों के लिए नियमों और विनियमों का पालन करेंगे। अपने नियमित संबद्ध बोर्ड पाठ्यक्रम के अलावा, वे सैनिक स्कूल पैटर्न के छात्रों को अकादमिक प्लस पाठ्यक्रम की शिक्षा भी प्रदान करेंगे। इन स्कूलों के संचालन

के तौर-तरीकों से संबंधित विवरण www.sainikschool.ncog.gov.in पर उपलब्ध हैं। इच्छुक छात्रों और अभिभावकों को वेब पोर्टल पर जाने और इस नए अवसर का लाभ उठाने के लिए आमंत्रित किया जाता है।

नामांकन प्रक्रिया:

- इन स्कूलों में नए सैनिक स्कूल पैटर्न में प्रवेश कक्षा VI स्तर पर केवल निम्नलिखित तरीके से होगा।
 - I. छठी कक्षा में कम से कम 40 प्रतिशत प्रवेश उन उम्मीदवारों का होगा जिन्होंने ई काउंसलिंग के माध्यम से एनटीए द्वारा आयोजित अखिल भारतीय सैनिक स्कूल प्रवेश परीक्षा उत्तीर्ण की है।
 - II. 60 प्रतिशत तक प्रवेश उसी स्कूल में नामांकित और नए सैनिक स्कूलों के इस वर्टिकल के तहत योग्यता परीक्षा के माध्यम से प्रवेश लेने के इच्छुक छात्रों का होगा, जिसके लिए अधिसूचना अलग से जारी की जाएगी।
- अखिल भारतीय सैनिक स्कूल प्रवेश परीक्षा-2022 में उत्तीर्ण उम्मीदवारों को एनटीए के साथ उनकी पंजीकृत ईमेल आईडी पर नए अनुमोदित सैनिक स्कूल खोलने और इन स्कूलों में आवेदन करने की प्रक्रिया के बारे में सूचित किया जा रहा है। ऐसे योग्य उम्मीदवार जो अपनी पसंद के नए अनुमोदित स्कूल में प्रवेश लेने के इच्छुक हैं, उन्हें पूर्व परामर्श <https://sainikschool.ncog.gov.in> पर पंजीकृत करना होगा। छात्रों को वेब पोर्टल पर लॉग इन करने और पंजीकरण करने के लिए अपने एआईएसएसईई-2022 आवेदन संख्या का उपयोग करना होगा जिसके बाद आवेदक छात्र ई-परामर्श के लिए प्राथमिकता के क्रम में 10 स्कूलों तक की पसंद का संकेत दे सकता है। पंजीकृत आवेदकों को प्रत्येक स्कूल के लिए मेरिट सूची के क्रम में एआईएसएसईई 2022 योग्य उम्मीदवारों द्वारा उस स्कूल में भरी जाने वाली सीटों की सीमा तक स्कूल आवंटित किए जाएंगे। नए सैनिक स्कूलों में शामिल होने के इच्छुक एआईएसएसईई 2022 के योग्य उम्मीदवारों को सलाह दी जाती है कि वे ई-परामर्श पर सभी नवीनतम अपडेट के लिए नियमित रूप से वेब पोर्टल देखें।
- नए सैनिक स्कूल में पहले से नामांकित और नए सैनिक स्कूलों के इस वर्टिकल के तहत पढ़ने के इच्छुक छात्रों को शीघ्र ही आयोजित होने वाली योग्यता परीक्षा के आधार पर प्रवेश प्रदान किया जाएगा। नए सैनिक स्कूलों को इसके बारे में अलग से अधिसूचित किया जा रहा है ताकि ऐसे इच्छुक उम्मीदवारों का विवरण, निर्धारित समय सीमा के भीतर, परीक्षा आयोजित करने वाली एजेंसी को प्रदान किया जा सके, जिसका विवरण वेब पोर्टल <https://sainikschool.ncog> पर भी उपलब्ध होगा।

अनुमोदित नए सैनिक स्कूलों के लिए शैक्षणिक सत्र मई 2022 के पहले सप्ताह में आरंभ होने की संभावना है। सांकेतिक समय सीमा वेब पोर्टल <https://sainikschool.ncog.gov.in> पर देखी जा सकती है।

अगले दौर में विचार के लिए शेष नए सैनिक स्कूलों के लिए आवेदन आमंत्रित करने के लिए पोर्टल के अप्रैल 2022 के पहले सप्ताह में फिर से खोले जाने की संभावना है। इच्छुक स्कूल/ गैर सरकारी संगठन साझेदारी मोड में जो वेब पोर्टल पर उपलब्ध हैं, नए सैनिक स्कूलों के लिए क्यूआर, एमओए और नियमों और विनियमों का अध्ययन कर सकते हैं। स्कूल/गैर सरकारी/ट्रस्ट/सोसाइटी आदि जिन्होंने पहले दौर के दौरान पहले ही पंजीकरण और आवेदन कर दिया है, उन्हें नए सिरे से आवेदन करने या फिर से पंजीकरण शुल्क का भुगतान करने की आवश्यकता नहीं है। बहरहाल, ऐसे पहले से पंजीकृत आवेदक क्यूआर, नियमों और विनियमों और एमओए का अध्ययन कर सकते हैं और वेब पोर्टल पर अपने डेटा को नए इनपुट के साथ, यदि कोई हो, अपडेट कर सकते हैं।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810010>



Press Information Bureau
Government of India

Ministry of Defence

Sat, 26 Mar 2022 3:12 PM

Ministry of Defence approves 21 new Sainik Schools in partnership mode from academic year 2022-2023

Ministry of Defence (MoD) has approved setting up of 21 new Sainik Schools, in partnership with NGOs/private schools/State Governments. These schools will be set up in the initial round of the Government's initiative of setting up of 100 new Sainik schools across the country in partnership mode. They will be distinct from the existing Sainik Schools. The objectives behind Prime Minister Shri Narendra Modi's vision of setting up of 100 new Sainik Schools is to provide quality education to the students in tune with National Education Policy and give them better career opportunities, including joining the Armed Forces. It also gives an opportunity to the private sector to work hand-in-hand with the Government towards nation building by refining today's youth to become responsible citizens of tomorrow.

State/UT-wise list of 21 approved new Sainik Schools is annexed and can also be seen at <https://sainikschool.ncog.gov.in/>. 17 of these Schools are Brownfield running schools and 4 are Greenfield schools to be operational shortly. While NGOs/ Trusts /Societies have share of 12 approved new schools, 6 private Schools and 3 State Government owned schools find place in the list of such approved new Sainik Schools. Unlike existing Sainik Schools which are purely residential in nature, 7 new Sainik Schools are Day School and 14 such new approved schools have residential arrangements.

These new Sainik Schools, besides their affiliation to respective education boards, will function under the aegis of Sainik Schools Society and will follow the Rules and Regulations for new Sainik schools in partnership mode prescribed by the Society. In addition to their regular affiliated board curriculum, they will also impart education of Academic PLUS curriculum to the students of Sainik school pattern. Details pertaining to the modalities of operation of these schools are available at <https://sainikschool.ncog.gov.in/>. Willing students and parents are invited to visit the web portal and take advantage of this novel opportunity.

Admission process:

(A) Entry to new Sainik School pattern in these schools will be at class VI level only on the following lines.

- i. At least 40 percent of intake in class VI will be from candidates who have qualified the All-India Sainik School Entrance Examination conducted by NTA through E-Counselling.
- ii. Upto 60 percent intake will be from students enrolled in the same school and desirous of taking admission under this vertical of new Sainik Schools through a qualifying test, notification for which will be issued separately.

(B) Candidates qualified in All India Sainik Schools Entrance Examination -2022 are being informed at their registered email id with NTA, regarding opening of new approved Sainik Schools and the procedure for applying in these Schools. Such qualified candidates willing to take admission in new approved school of their choice will have to register themselves for e-counseling at <https://sainikschool.ncog.gov.in>. Students will have to use their AISSEE -2022 application number for logging in and registering at the web portal after which the applicant student can indicate choice of upto 10 schools in order of priority for e-counseling. Schools will be allotted to registered applicants in order of the merit list for each school to the extent of seats to be filled in that school by the AISSEE 2022 qualified candidates. Qualified candidates of AISSEE 2022 willing to join new Sainik Schools are advised to check web portal regularly for all latest updates on e-counseling.

(C) For the students already enrolled in the new Sainik School and desirous of studying under this vertical of new Sainik Schools, admission will be provided on the basis of a qualifying test to be conducted shortly. The new Sainik Schools are being notified about the same separately to collect and provide details of such willing candidates, within the prescribed timelines, to the test conducting agency, details of which will also be available at the web portal <https://sainikschool.ncog.gov.in/>. Academic session for approved New Sainik Schools is likely to commence in first week of May 2022. Indicative timelines can be seen at web portal <https://sainikschool.ncog.gov.in>. Portal for inviting applications for remaining new Sainik Schools for consideration in the next round is likely to be re-opened in the first week of April 2022. Willing schools/NGOs may go through the QRs, MoA and Rules & Regulations for the new Sainik schools in partnership mode which are available on the web portal. Schools /NGOs/Trusts/Societies etc. who have already registered and applied during first round need not apply afresh or pay registration fee again. However, such earlier registered applicants may go through the QRs, Rules and Regulations and MoA and update their data on web portal, with fresh inputs, if any.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1809987>

Defence ministry beefs up border security with indigenous technology lights

The defence ministry has increased surveillance at the borders with the help of lights made with the help of indigenous technology by a Kanpur firm. The lights on the outskirts cover a radius of up to one kilometre, so that enemy movements can be seen clearly. To increase its range, lenses have been used on LEDs.

Mahendra Awasthi, MD, Carpet Lights Company, said during the demo that these searchlights rotate continuously for 360 degrees. So far, four thousand lights have been supplied on the borders of Punjab, Gujarat, Ladakh, Arunachal Pradesh, and Uttarakhand. Mahendra Awasthi added that he has been working to make such lights for 25 years.

"When the Galwan Valley incident happened, that time we got the order for lights for the India-China Border," Awasthi said. Twenty Indian soldiers and an unspecified number of Chinese troops died in the Galwan Valley clash on June 15, 2020. According to reports, pitch-black darkness in the area was a major reason behind the incident as the forces had to face difficulty during the incident.

<https://www.indiatoday.in/india/story/defence-ministry-beefs-up-border-security-with-indigenous-technology-lights-1930081-2022-03-27>



India to build nuclear power plants in 'Fleet Mode' from 2023

With the first pour of concrete for a 700 MW atomic power plant in Karnataka's Kaiga scheduled in 2023, India is set to put in motion construction activities for 10 'fleet mode' nuclear reactors over the next three years. The first pour of concrete (FPC) signals the beginning of construction of nuclear power reactors from the pre-project stage which includes excavation activities at the project site.

"The FPC of Kaiga units 5&6 is expected in 2023; FPC of Gorakhpur Haryana Anu Vidyut Praiyonjan units 3 & 4 and Mahi Banswara Rajasthan Atomic Power Projects units 1 to 4 is expected in 2024; and that of Chutka Madhya Pradesh Atomic Power Project units 1 & 2 in 2025," officials of the Department of Atomic Energy (DAE) told the Parliamentary panel on science and technology. The Centre had approved construction of 10 indigenously developed pressurised heavy water reactors (PHWR) of 700 MW each in June 2017. The ten PHWRs will be built at a cost of ₹ 1.05 lakh crore.

It was for the first time that the government had approved building 10 nuclear power reactors in one go with an aim to reduce costs and speed up construction time. Bulk procurement was underway for the fleet mode projects with purchase orders placed for forgings for steam generators, SS 304L lattice tubes and plates for end shields, pressuriser forgings, bleed condensers forgings, incoloy-800 tubes for 40 steam generators, reactor headers, DAE officials said. Engineering, procurement and construction package for turbine island has been awarded for Gorakhpur units three and four and Kaiga units five and six, they added.

Under the fleet mode, a nuclear power plant is expected to be built over a period of five years from the first pour of concrete. Currently, India operates 22 reactors with a total capacity of 6780 MW in operation. One 700 MW reactor at Kakrapar in Gujarat was connected to the grid on January 10 last year, but it is yet to start commercial operations. The PHWRs, which use natural uranium as fuel and heavy water as moderator, have emerged as the mainstay of India's nuclear power program.

India's first pair of PHWRs of 220 MW each were set up at Rawatbhata in Rajasthan in the 1960s with Canadian support. The second reactor had to be built with significant domestic components as Canada withdrew support following India's peaceful nuclear tests in 1974.

As many as 14 PHWRs of 220 MW each with standardised design and improved safety measures were built by India over the years. Indian engineers further improvised the design to increase the power generation capacity to 540 MWe, and two such reactors were made operational at Tarapur in Maharashtra.

<http://www.indiandefensenews.in/2022/03/india-to-build-nuclear-power-plants-in.html>



Mon, 28 Mar 2022

DPSUS produced military hardware worth Rs 1.52 lakh crore in last 3 fiscals

India's defence public sector units have produced military platforms and hardware worth Rs 1,52,275 crore in the last three financial years, according to official data presented in Lok Sabha on Friday. In responding to a question, Minister of State for Defence Ajay Bhatt said the total value of defence equipment produced by the defence public sector units (DPSUs) was Rs 45,458 crore in 2018-19.

The value of production went up to Rs 47,539 crore in 2019-20 while it further rose to Rs 59,278 crore in 2020-21, Bhatt said. "The government has taken several policy initiatives in the past few years and brought in reforms to encourage indigenous design, development and manufacture of defence equipment in the country," he said.

In the last few years, the government has taken a series of measures to boost domestic defence manufacturing. In May 2020, the government announced increasing the FDI limit from 49 per cent to 74 per cent under the automatic route in the defence sector.

India is one of the largest importers of arms globally. According to estimates, the Indian armed forces are projected to spend around USD 130 billion (one billion is equal to 100 crores) in capital procurement in the next five years. The government now wants to reduce

dependence on imported military platforms and has decided to support domestic defence manufacturing.

To a separate question, Defence Minister Rajnath Singh said the Indian Navy has neither arrested any Sri Lankan fishermen nor seized any of their boats with regard to border violation or any other cases. “However, 460 Sri Lankan fishermen have been arrested and 87 of their boats have been seized with regard to border violation and other cases by Indian Coast Guard from 2014 till date,” he said. Singh said the Sri Lankan Navy has arrested 2,601 Indian fishermen and seized 473 boats with regard to border violation and other cases from 2014 till date.

He was asked about the total number of Sri Lankan fishermen arrested by the Indian Navy with regard to maritime border violation and other cases since 2014. Singh was also asked about the total number of Indian fishermen arrested by the Sri Lankan Navy during the period.

<http://www.indiandefensenews.in/2022/03/dpsus-produced-military-hardware-worth.html>



Mon, 28 Mar 2022

With last of FOC LCA-Tejas in line, focus shifts to Tejas Mk1A and LCA-LIFT

With only the last 2-3 units of the order 16 FOC LCA-Tejas Mk1 remaining to conclude its first flight, work on converting an LSP (Limited Series Production) Tejas into Flying Test Bed (FTB) for the upgraded Tejas Mk1A program is gaining pace as first flight of the aircraft is planned in June this year that will be followed by another LSP converted to Mk1A FTB later in the year. HAL is planning to start deliveries of the 8 LCA-Tejas Mk1 Trainers that are under production by mid of this year will be followed by the production of 10 more units that were ordered along with the 73 Tejas Mk1A before deliveries of the first two Tejas Mk1A starts by March 2024.

HAL plans to supply 8 more Tejas Mk1A by March 2025 and later it will ramp up the production rate to 16 and later 18 by 2029 when it concludes all orders. idrw.org has been told the first tranche of 12 GE Aviation F404- GE-IN20 engines will start arriving from mid-2023 and will continue till 2029 when the last of the Tejas Mk1A are planned to be rolled out. HAL last year placed orders for 99 F404-GE-IN20 engines after HAL secured an order from the Indian Air Force for the supply of 83 Tejas fighters. LCA-LIFT After getting go head to develop a Lead-in fighter trainer aircraft based on the LCA-Tejas trainer as the base, work on the LCA-LIFT FTB will start sometime in 2024 as priority remains to get Tejas Mk1A as per the agreed timeline to IAF. LCA-LIFT will see a radical shift from the technology that was incorporated in the Trainer variants of the LCA-Tejas as plans are afoot to incorporate a cockpit that's representative of an advanced frontline fighter jet, such as the Su-30, Rafale, or AMCA to meet all future jet training needs. LCA-LIFT will also be used to impart training on weapons, electronic warfare pods, air combat maneuvering, instrumentation pods, and fuel tanks.

<https://idrw.org/last-of-foc-lca-tejas-in-line-focus-shifts-to-tejas-mk1-and-lca-lift/>

Mon, 28 Mar 2022

India signs MoU at Dubai expo to enhance 'Tejas' upskilling project

The Indian authorities signed a Member of Understanding with various companies to facilitate the economic and management support of TEJAS (Training for Emirates Jobs And Skills), a Skill India International project to train overseas Indians.

The MoU was signed between India's National Skill Development Corporation (NSDC) and Gulf counties based EFS, DulSCO, Artificial Intelligence Organization, FutureMilez, Lulu International Exchange, EDI and Prime Health Group in the presence of Union Minister for Information and Technology Anurag Thakur at the Dubai Expo 2020.

"India's youth not only contributes towards nation-building but also the largest skilled manpower in the world... TEJAS is launched to provide high-quality skills as per global standards. Even during the pandemic, the workforce has been skilled, certified and employed," said Anurag Thakur at the event.

The Minister of Education and Minister of Skill Development and Entrepreneurship Dharmendra Pradhan speaking at the event through video conferencing expressed confidence India becoming the Skill Capital of the world.

"India will soon become the Skill Capital of the world. India's skilled workforce is scripting India's growth story and also contributing to the world economy," said Pradhan. The Consulate General of India to Dubai Aman Puri said that TEJAS will act as a pathway between India and UAE. "TEJAS will create pathways between India-UAE and enable the Indian workforce to be equipped with the skills required for the market in the UAE," said Puri.

The project is aimed at skilling, certification and overseas employment of Indians. TEJAS is aimed at creating pathways to enable the Indian workforce to get equipped for skill and market requirements in UAE, according to a press statement from the Ministry of Information and Broadcasting.

The six-month-long Dubai Expo that commenced in October last year witnessed the participation of as many as 192 countries. Fifteen states and nine central ministries from India are participating in this expo, which will be ending on March 31, 2022.

<http://www.indiandefensenews.in/2022/03/india-signs-mou-at-dubai-expo-to.html>

Jaishankar underlines Defence ties in India-Maldives partnership 'Full of Promises'

Asserting that the defence cooperation is another key pillar of the India-Maldives partnership, External Affairs Minister S Jaishankar on Saturday said that the ties between both the nations are full of promises and possibilities for their youth and future generations.

Jaishankar was attending the inauguration ceremony of the National College for Policing & Law Enforcement (NCPL) at Addu city in the Maldives today. He congratulated the Maldives Government and its people on the successful completion of NCPL.

"This venerable institution has left its imprint in many ways of making modern India. I emphasise that its contribution in the realm of foreign policy has been particularly strong. A score of foreign service officers have passed through its gates over the decade and currently, both the External Affairs Minister (Jaishankar) and Foreign Secretary (Harsh Shringla) have had the privilege of studying here," he said during the speech.

On Saturday, India's External Affairs Minister S Jaishankar went to the Maldives on a two-day visit from March 26 to March 27 after he got an invite from his Maldivian counterpart. External Affairs Minister also said that India-Maldives partnership envelopes cooperation in almost every facet of the bilateral relationship. "The focus of the engagement is the well-being of our people," he added. Speaking about the foreign policy, Jaishankar said: "Your (Maldives) policy of 'India First' and our policy of 'Neighbourhood First' are not just phrases but the very fulcrum of India-Maldives relationship."

Meanwhile, Maldives Foreign Minister Abdulla Shahid said that New Delhi is Maldives' most trusted partner. "Ours is a relationship of mutual respect based on trust and confidence." Shahid, who is also a President of the United Nations General Assembly, in a Tweet also thanked India for standing in solidarity with the Maldives, and for being its friend and partner throughout the years.

<http://www.indiandefensenews.in/2022/03/jaishankar-underlines-defence-ties-in.html>



Press Information Bureau
Government of India
Ministry of Science & Technology

Sat, 26 Mar 2022 6:23PM

CSIR-NAL showcases civil aircraft initiatives at Wings India 2022

CSIR-NAL's Multi-copter drones, HANSA-NG and SARASMK2 aircrafts, major attractions at the aviation show

CSIR-National Aerospace Laboratories, Bangalore (CSIR-NAL) is participating in Wings India 2022 and showcasing its indigenous initiatives of civil aircrafts for flying training & commuter air connectivity.

HANSA-NG Aircraft designed and developed by CSIR-NAL is major attraction in Wings 2022. HANSA-NG was piloted by Wg. Cdr. Dilip Reddy, an Experimental Test Pilot of IAF. He has demonstrated its flying capabilities like climb, descend, maneuvering, low level stability and short take off /landing, exciting the viewers.

HANSA-NG is one of the most advanced two seat flying trainer aircraft powered by Rotax Digital Control Engine with unique features like Just-In-Time Prepreg (JIPREG) Composite lightweight Airframe, Glass Cockpit, Bubble Canopy with wide panoramic view, electrically operated flaps, etc. HANSA NG is capable of flying upto an altitude of 10000ft with max speed of 200 kmph with more than 5 hrs endurance. HANSA -NG completed more than 55 hours of flying and will be type certified by DGCA shortly. NAL has already received more than 80 nos. of LoIs (Letter of Intent) from various flying clubs across the country and delivery is scheduled from July 2022.

The spectacular formation flying of multi-copter drones developed by NAL demonstrating live societal applications has caught attention of many. The unique features of multi-copter drone are fully autonomous BVLOS (Beyond Visual Line of sight) operation capability with max payload capability of 20kg with endurance of about 30 mins. MoCA has given the conditional clearance and more than 60hrs of flying is completed.

NAL showcased the fully loaded 1:1 mockup of SARASMK2 with glass cockpit, Cabin interiors including toilet, Cargo compartments and other cabin safety features. SARAS-Mk II is a 19 Seat Light Transport Aircraft with multirole capabilities like Passenger transport, Troop transport, VIP transport and Casevac (AirAmbulance). The aircraft is exclusively designed for operations from short runways, hot and high airfields, and semi-prepared runways for connecting Tier 1 & Tier 2 cities / towns. SARAS-MkII is one of the unique aircraft where operational benefits are maximized through the Pressurized Cabin, Digital antiskid braking, Autopilot with Cat III landing, two lever engine operation, Lightweight materials etc. by keeping cost minimum. Aircraft has capability to fly upto 29000 ft at max

speed of 500 kmph with range of 778 km and will be ideal candidate for promoting regional air connectivity under UDAN (UdeDesh ka Nagrik) scheme.

Shri Jitendra Jadhav Director CSIR-NAL stated that the design is carried out with extensive use of digital tools like 3D platforms, virtual reality, advanced CATIA, Digital Mock Up (DMU) and PLM (Project Life Cycle Management) techniques to reduce efforts in design and manufacturing. He further stated that, the flight test efforts are reduced by realizing high fidelity simulator's & test facilities where most test points can be demonstrated on the ground.

NAL demonstrated functional sub scale model of High Altitude Platforms (HAP) as a futuristic path breaking technology. HAP is a solar-powered UAV capable of day & night operation at a height of 20 km for more than 90 days. HAP will be a game-changer to work as a pseudo satellite for telecommunication applications in the 5G & 6G spectrum with advantages like low data latency, high bandwidth, the flexibility of launch and low cost. HAP will be used for variety of applications like broadband communication, surveillance, earth observation, climate research etc. The deep technology innovations like intermediate modulus grade carbon fiber, carbon prepreg, special coatings for aerospace applications, Cf-SiC composites, Just-In-time Pre-preg, thermoplastic composites, ARINC 818 IP core, etc., for various aerospace applications towards self-reliance are demonstrated.

In an interaction with the press at Wings India 2022, Dr Shekhar C Mande, Secretary, DSIR & Director General, CSIR said "New Generation aircraft called the HANSA-NG has been developed by incorporating the state-of-the-art technologies and New Generation Design features. It offers advanced digital display systems using certified instruments, two primary flight displays with built in redundant power supply. The indigenous HANSA-NG will benefit Indian Flying Clubs as well as other customer applications like bird reconnaissance at airfields, cadet training, coastal surveillance, and hobby flying. As a result of this, CSIR-NAL received firm commitments for 10 Nos from M/s Belagavi Aviation Pvt Ltd during Wings India 2022. M/s Blue ray aviation has also shown interest in acquiring 3 nos of the aircraft during the Wings India. We thank Indian Air Force Test Pilot Wg. Cdr. Dilip Reddy for his brilliant flight demonstration during the flying display sessions". The delivery of aircraft is scheduled from July 2022 with private / public industry participation

He mentioned that "Multi-copter drones developed by NAL are being demonstrated in Wings India which are configured for Precision Agriculture, Geo exploration studies and for last mile delivery / medicine/vaccine delivery. The uniqueness of these UAVs are their higher payload capacity and longer endurance which are essential requirements for last-mile delivery, floriculture mapping, geophysical exploration studies (Underground minerals and water exploration), precision agriculture and pesticide spraying to remote places. NAL had demonstrated these capabilities to Govt. authorities all over India. Agreements were signed or Technology Transfer of these multi-copters (Quad, Hexa, Octa) to M/s Scientech Industries Pvt Ltd, Indore, M/s Magic Myna, Coimbatore and M/s C I Network Technologies Pvt Ltd, Ahmedabad during Wings India on 24th March 2022". These MSME's will start production in next three months' time @ rate of 100 – 200 drones per month.

DG-CSIR also stated that Armed Forces have already committed 15 nos of SARAS-Mk II for initial induction. The aircraft will be complied to FAR 23 standards and will be certified by DGCA and CEMILAC for Civil and Military use. The first flight is likely to be in June 2024 and the production will be from 2026-27 onwards. The SARAS MKII will be a game-changer to boost air connectivity under the UDAN scheme. I am glad to state that M/s ICATT Air Ambulance Service has given two nos of LoI for SARAS-Mk II aircraft for

medical version offlying ICU & Operation Theater. SARAS-Mk II will be an ideal platform for ultra-critical flying services which ICATT is a pioneer and is the largest air ambulance service in Asia.

He further stated that the development of HAP is progressing on fast track and the functional subscale model prototype is being demonstrated at Wings India 2022. The subscale model will fly by Aug 2022 to evaluate the aerodynamics, stability control and avionics & autopilot performance. The flight test data will be used to optimize final design and Proof-of-Concept (PoC) of full-scale HAP will be demonstrated at a height of 20km with 2hrs endurance by March 2024. Thereafter the full scale engineering will be taken up by NAL along with industries. While congratulating the NAL team, he said that NAL is moving rapidly towards the commercialization of aircraft and aerospace technologies for common man use to make India self-reliant under Atmanirbhar Bharat mission of government.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810024>



पत्र सूचना कार्यालय
भारत सरकार

विज्ञान एवं प्रौद्योगिकी मंत्रालय

Sat, 26 Mar 2022 6:23PM

सीएसआईआर-एनएएल ने विंग्स इंडिया 2022 में नागरिक विमान पहल का प्रदर्शन किया

सीएसआईआर-एनएएल के मल्टी-कॉप्टर ड्रोन, हंसा-एनजी और एसएआरएसएमके 2 विमान एविएशन शो में प्रमुख आकर्षण रहा

वैज्ञानिक और औद्योगिक अनुसन्धान परिषद - राष्ट्रीय एयरोस्पेस प्रयोगशालाएँ (सीएसआईआर-नेशनल एयरोस्पेस लेबोरेटरीज), बंगलुरु विंग्स इंडिया 2022 में भाग लेने के साथ ही उड़ान प्रशिक्षण और कम्प्यूटर एयर कनेक्टिविटी के लिए नागरिक विमानों की अपनी स्वदेशी पहल का प्रदर्शन कर रही है।

सीएसआईआर-एनएएल द्वारा डिजाइन किया हुआ और विकसित हंसा-एनजी विमान इस विंग्स 2022 में प्रमुख आकर्षण है। हंसा-एनजी को भारतीय वायुसेना के एक प्रायोगिक परीक्षण पायलट विंग कमांडर दिलीप रेड्डी, द्वारा उड़ाया गया था। उन्होंने अपनी उड़ान के दौरान इस विमान की क्षमताओं जैसे चढ़ाई, उतरना, पैतरबाज़ी, नीची उड़ान के समय की स्थिरता और शॉर्ट टेक ऑफ/लैंडिंग का प्रदर्शन किया है जिससे दर्शक उत्साहित हुए।

हंसा-एनजी रोटैक्स डिजिटल कंट्रोल इंजन द्वारा संचालित सबसे उन्नत दो सीट वाले फ्लाईंग ट्रेनर विमानों में से एक है, जिसमें जस्ट-इन-टाइम प्रीप्रेग (जेआईपीआईजी) कम्पोजिट लाइटवेट एयरफ्रेम, ग्लास कॉकपिट, बबल कैनोपी विद वाइड पैनोरमिक व्यू, विद्युत संचालित फ्लैप इत्यादि अनूठी

विशेषताएं शामिल हैं। हंसा एनजी 10000 फीट की ऊंचाई तक 200 किमी प्रति घंटे की अधिकतम गति के साथ 5 घंटे से अधिक क्षमता के साथ उड़ान भरने में सक्षम है। हंसा-एनजी ने उड़ान के 55 घंटे से अधिक का समय पूरा किया और शीघ्र ही नागर विमानन महानिदेशालय (डीजीसीए) द्वारा इसे टाइप प्रमाणित किया जाएगा। एनएएल को पहले ही देश भर के विभिन्न फ्लाइटिंग क्लबों से 80 से अधिक आशयपत्र (लेटर ऑफ इंटेन्ट-एलओआई) मिल चुके हैं और इनकी डिलीवरी जुलाई 2022 से निर्धारित है।

जीवंत सामाजिक अनुप्रयोगों का प्रदर्शन करने के साथ ही एनएएल द्वारा विकसित इस मल्टी-कॉप्टर ड्रोन की शानदार फॉर्मेशन उड़ान ने कई लोगों का ध्यान आकर्षित किया। मल्टी-कॉप्टर ड्रोन की अनूठी विशेषता पूरी तरह से स्वायत्त बीवीएलओएस (बिऑन्ड विजुअल लाइन ऑफ विजन) संचालन क्षमता है और जिसमें लगभग 30 मिनट की एनड्यूरेंस के साथ 20 किग्रा की अधिकतम पेलोड क्षमता है। नागर विमानन मंत्रालय (एमओसीए) ने इसे सशर्त मंजूरी दे दी है और इसकी 60 घंटे से अधिक की उड़ान पूरी हो गई है।

एनएएल ने ग्लास कॉकपिट के साथ एसएआरएसएमके2 के पूरी तरह से लोडेड 1:1 मॉकअप, शौचालय सहित केबिन इंटीरियर, कार्गो कम्पार्टमेंट्स और अन्य केबिन सुरक्षा सुविधाओं का प्रदर्शन किया। एसएआरएसएमके II एक 19 सीटर हल्का परिवहन विमान (लाइट ट्रांसपोर्ट एयरक्राफ्ट) है जिसमें यात्री परिवहन, सैन्य परिवहन, वीआईपी ट्रांसपोर्ट और केसवैक (एयर एम्बुलेंस) जैसी बहु-भूमिका निर्वहन क्षमताएं हैं। विमान को विशेष रूप से छोटे रनवे, गर्म और ऊंचाई वाले क्षेत्रों और टियर 1 और टियर 2 शहरों / कस्बों को जोड़ने के लिए अर्ध-निर्मित रनवे से संचालन के लिए डिज़ाइन किया गया है। एसएआरएसएमके II उन अद्वितीय विमानों में से एक है जिनमें न्यूनतम लागत को ध्यान में रखते हुए दवाबयुक्त (पेशराइज्ड) केबिन, डिजिटल एंटीस्किड ब्रेकिंग, कैटII लैंडिंग के साथ ऑटोपायलट, दो लीवर इंजन संचालन, लाइटवेट सामग्री आदि के माध्यम से परिचालन लाभ को अधिकतम किया जाता है। इस विमान में 778 किमी की सीमा के साथ 500 किमी प्रति घंटे की अधिकतम गति से 29000 फीट तक उड़ान भरने की क्षमता है और यह उड़ान (उड़े देश का नागरिक-यूडीएएन) योजना के तहत क्षेत्रीय हवाई संपर्क को बढ़ावा देने के लिए आदर्श प्रत्याशी होगा।

सीएसआईआर-एनएएल में निदेशक श्री जितेंद्र जाधव निदेशक ने कहा कि डिजाइन और विनिर्माण में प्रयासों को कम करने के लिए इस विमान के डिजाइन को त्रि-आयामी (3डी) प्लेटफॉर्म, वर्चुअल रियलिटी, उन्नत सीएटीआईए, डिजिटल मॉक अप (डीएमयू) और पीएलएम (प्रोजेक्ट लाइफ साइकिल मैनेजमेंट) तकनीकों जैसे डिजिटल उपकरणों के व्यापक उपयोग के साथ अभिकल्पित किया गया है। उन्होंने आगे कहा कि हाई फिडेलिटी सिम्युलेटर और परीक्षण सुविधाओं का उपयोग करके उड़ान परीक्षण प्रयासों को इस प्रकार कम किया गया है ताकि वस्तु स्थिति के अनुसार अधिकांश परीक्षण बिंदुओं का प्रदर्शन किया जा सके।

एनएएल ने भविष्य की पथ प्रवर्तक प्रौद्योगिकी के रूप में उच्च ऊंचाई वाले प्लेटफार्मों (एचएपी) के कार्यात्मक उप-स्तरीय मॉडल का प्रदर्शन किया। एचएपी एक सौर ऊर्जा संचालित मानव रहित विमान

(यूएवी) है जो 90 दिनों से अधिक समय तक 20 किमी की ऊंचाई पर दिन और रात के संचालन में सक्षम है। एचएपी 5जी और 6Gजी स्पेक्ट्रम में दूरसंचार अनुप्रयोगों के लिए एक छद्म उपग्रह (स्यूडो सैटेलाईट) के रूप में काम करने के लिए एक ऐसा गेम-चेंजर होगा जिसमें कम डेटा प्रसुप्ति (लेटेन्सी), उच्च बैंडविड्थ, लॉन्च में लचीलापन और कम लागत जैसे फायदे होंगे। एचएपी का उपयोग विभिन्न प्रकार के अनुप्रयोगों जैसे ब्रॉडबैंड संचार, निगरानी, पृथ्वी के अवलोकन, जलवायु अनुसंधान आदि के लिए किया जाएगा।

विभिन्न एयरोस्पेस अनुप्रयोगों में आत्मनिर्भरता के प्रदर्शन के लिए इंटरमीडिएट मॉड्यूलस ग्रेड कार्बन फाइबर, कार्बन प्रीप्रेग, एयरोस्पेस अनुप्रयोगों के लिए विशेष कोटिंग्स, सीएफ-एसआईसी कंपोजिट, जस्ट-इन-टाइम प्री-प्रेग, थर्मोप्लास्टिक कंपोजिट्स, एआरआईएनसी 818 आईपी कोर इत्यादि जैसे गहन प्रौद्योगिकी नवाचार का प्रयोग किया गया है।

विंग्स इंडिया 2022 में प्रेस के साथ बातचीत में डीएसआईआर सचिव और सीएसआईआर के महानिदेशक डॉ शेखर सी मंडे ने कहा की "हंसा-एनजी नामक नई पीढ़ी के विमान को अत्याधुनिक तकनीकों और नई पीढ़ी की सुविधाओं को समाहित करके विकसित किया गया है। यह दो प्राथमिक उड़ान डिस्प्ले में निर्मित अनावश्यक बिजली आपूर्ति के साथ प्रमाणित उपकरणों का उपयोग करके उन्नत डिजिटल डिस्प्ले सिस्टम प्रदान करता है। स्वदेशी हंसा-एनजी से भारतीय फ्लाइंग क्लबों के साथ-साथ अन्य ग्राहक अनुप्रयोगों जैसे हवाई क्षेत्रों में पक्षी टोही, कैंडेट प्रशिक्षण, तटीय निगरानी और हॉबी फ्लाइंग को लाभ होगा। इसके परिणामस्वरूप, सीएसआईआर-एनएएल ने विंग्स इंडिया 2022 के दौरान मेसर्स बेलागवी एविएशन प्राइवेट लिमिटेड से 10 विमानों के लिए दृढ़ प्रतिबद्धता प्राप्त की। मेसर्स ब्लू रे एविएशन ने भी विंग्स इंडिया के दौरान 3 विमान विमान प्राप्त करने में रुचि दिखाई है। हम उड़ान प्रदर्शन सत्र के दौरान शानदार उड़ान प्रदर्शन के लिए भारतीय वायु सेना के टेस्ट पायलट विंग कमांडर दिलीप रेड्डी को धन्यवाद देते हैं। निजी /सार्वजनिक उद्योग की भागीदारी के साथ इस विमान की डिलीवरी जुलाई 2022 से निर्धारित है

उन्होंने उल्लेख किया कि "एनएएल द्वारा विकसित मल्टी-कॉप्टर ड्रोन का प्रदर्शन विंग्स इंडिया में किया जा रहा है जो कि सटीक कृषि, भू अन्वेषण अध्ययन और देश के हर क्षेत्र में वितरण/दवा/वैक्सीन वितरण के लिए तैयार किए गए हैं। इन यूएवी की विशिष्टता उनकी उच्च पेलोड क्षमता और लंबी सहनशक्ति है जो कि हर क्षेत्र में वितरण (लास्ट माइल डिलीवरी), फूलों की खेती (फ्लोरीकल्चर) मानचित्रण, भूभौतिकीय (जियोफिजिकल) अन्वेषण अध्ययन (भूमिगत खनिज और पानी की खोज), सटीक कृषि और दूरस्थ स्थानों पर कीटनाशक छिड़काव के लिए आवश्यक आवश्यकताएं हैं। एनएएल ने पूरे भारत में सरकार के अधिकारियों के समक्ष इन क्षमताओं का प्रदर्शन किया था। विंग्स इंडिया प्रदर्शन के दौरान मेसर्स साइंटेक इंडस्ट्रीज प्राइवेट लिमिटेड, इंदौर, मेसर्स मैजिक मैना, कोयंबटूर और मेसर्स सीआई नेटवर्क टेक्नोलॉजीज प्राइवेट लिमिटेड, अहमदाबाद को इन मल्टी-कॉप्टर्स (क्वाड, हेक्सा, ऑक्टा) के समझौतों पर 24 मार्च 2022 को हस्ताक्षर किए गए अथवा इनकी प्रौद्योगिकी

हस्तांतरण किया गया। ये सूक्ष्म, लघु एवं मध्यम उद्यम (एमएसएमई) अगले तीन महीनों की अवधि में 100-200 ड्रोन प्रति माह की दर से उत्पादन शुरू करेंगे।

सीएसआईआर के महानिदेशक ने भी कहा कि सशस्त्र बलों ने पहले ही शुरूआती दौर में 15 एसएआरएस-एमके II को शामिल करने के लिए प्रतिबद्धता दिखाई है। विमान एफएआर 23 मानकों का अनुपालन करेगा और नागरिक और सैन्य उपयोग के लिए डीजीसीए तथा सीईएमआईएलएसी द्वारा प्रमाणित किया जाएगा। पहली उड़ान जून 2024 में होने की संभावना है और इनका उत्पादन 2026-27 से होगा। एसएआरएस-एमके II उड़ान (यूडीएएन) योजना के तहत हवाई संपर्क को बढ़ावा देने के लिए एक परिवर्तन कारी क्षण साबित होगा। मुझे यह बताते हुए खुशी हो रही है कि मेसर्स आईसीएटी एयर एम्बुलेंस सेवा ने आईसीयू और ऑपरेशन थियेटर के मेडिकल संस्करण के लिए एसएआरएस-एमके II विमान के लिए दो आशयपत्र (एलओआई) दिए हैं। एसएआरएस-एमके II अल्ट्रा-क्रिटिकल फ्लाईंग सेवाओं के लिए भी एक आदर्श मंच होगा जिसके लिए आईसीएटी एक अग्रणी संस्था है और एशिया में सबसे बड़ी एयर एम्बुलेंस सेवा है।

उन्होंने आगे कहा कि एचएपी का विकास तेजी से आगे बढ़ रहा है और विंग्स इंडिया 2022 में कार्यात्मक सबस्केल मॉडल प्रोटोटाइप का प्रदर्शन किया जा रहा है। सबस्केल मॉडल अगस्त 2022 तक वायुगतिकी (एयरोडाइनेमिक्स), स्थिरता नियंत्रण और एवियोनिक्स और ऑटोपायलट प्रदर्शन का मूल्यांकन करने के लिए उड़ान भरेगा। उड़ान परीक्षण डेटा का उपयोग अंतिम डिजाइन को अनुकूलित करने के लिए किया जाएगा और पूर्ण पैमाने के एचएपी के प्रूफ-ऑफ-कॉन्सेप्ट (पीओसी) को मार्च 2024 तक 2 घंटे की एनड्यूरेंस साथ 20 किमी की ऊंचाई पर प्रदर्शित किया जाएगा। इसके बाद पूर्ण पैमाने पर अभियांत्रिकी के लिए इसे उद्योगों के साथ राष्ट्रीय एयरोस्पेस प्रयोगशाला (एनएएल) द्वारा इसे इंजीनियरिंग के लिए प्रयोग किया जाएगा।

एनएएल टीम को बधाई देते हुए उन्होंने कहा कि एनएएल सरकार के आत्मनिर्भर भारत मिशन के तहत भारत को आत्मनिर्भर बनाने के लिए आम आदमी के उपयोग के लिए विमान और एयरोस्पेस प्रौद्योगिकियों के व्यावसायीकरण की दिशा में तेजी से आगे बढ़ रहा है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810122>

The Tribune

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India's radar imaging satellite EOS-04 performing well: ISRO

Indian space agency on Saturday said the country's radar imaging satellite named earth observation satellite -04 (EOS-04) launched this February is functioning well and is healthy. According to Indian Space Research Organisation (ISRO), the EOS-04 previously named as RISAT-1A's first payload imaging was successfully completed on February 25, 2022. The

space agency said detailed in-orbit tests are underway. Radiometry, geometric evaluation, interferometric calibration, etc. are being carried out.

On February 14, 2022 morning, India's Polar Satellite Launch Vehicle C52 (PSLV-C52) successfully placed into orbit its radar imaging satellite and two other small satellites- INS-2TD and INSPIRESat-1. ISRO said all the satellites are healthy and performing satisfactorily.

India's radar imaging satellite EOS-04 is designed to provide high quality images under all weather conditions for applications such as agriculture, forestry, plantations, soil moisture, hydrology and flood mapping.

The EOS-04 with a mission life of 10 years is a repeat of RISAT-1 launched in 2012 and is configured to ensure continuity of synthetic aperture radar (SAR) in C-Band providing microwave data to the user community for operational services. The satellite will play a strategic role in the nation's defence with its capability to operate in day, night and in all weather conditions.

The satellite has high data handling systems and high storage devices among other things. The INSPIRESat-1 is a student satellite from Indian Institute of Space Science & Technology (IIST) in association with Laboratory of Atmospheric & Space Physics at University of Colorado, USA. The other contributors are NTU, Singapore and NCU, Taiwan. The satellite carries two scientific payloads to improve the understanding of ionosphere dynamics and the sun's coronal heating process.

The technology demonstrator satellite (INS-2TD) from ISRO, which is a precursor to India-Bhutan Joint Satellite (INS-2B) carries a thermal imaging camera to assess land/water surface temperature of wetlands/lakes, delineation of vegetation (crops/forests) and day/night thermal inertia. IANS

<https://www.tribuneindia.com/news/science-technology/indias-radar-imaging-satellite-eos-04-performing-well-isro-380987>



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Scientists work to turn noise on quantum computers to their advantage

Scientists simulate 'fingerprint' of noise on quantum computer. Unique study could point way to new approach, uses for quantum technology. For humans, background noise is generally just a minor irritant. But for quantum computers, which are very sensitive, it can be a death knell for computations. And because "noise" for a quantum computer increases as the computer is tasked with more complex calculations, it can quickly become a major obstacle. But because quantum computers could be so incredibly useful, researchers have been experimenting with ways to get around the noise problem. Typically, they try to measure the noise in order to correct for it, with mixed success.

A group of scientists from the University of Chicago and Purdue University collaborated on a new technique: Instead of directly trying to measure the noise, they instead construct a unique "fingerprint" of the noise on a quantum computer as it is seen by a program run on the

computer. This approach, they say, shows promise for mitigating the noise problem—as well as suggesting ways that users could actually turn noise to their advantage.

“We wondered if there was a way to work with the noise, instead of against it,” said David Mazziotti, professor in the Department of Chemistry, James Franck Institute and the Chicago Quantum Exchange and a co-author on the

‘A fresh approach’

Quantum computers are based on the laws of how particles behave at the atomic level. Down at that level, particles obey a set of very strange rules; they can be in two different states at once, or become ‘entangled’ across space. Scientists hope to harness these abilities as the basis for computers. In particular, many scientists want to use quantum computers to better understand the rules of the natural world, because molecules operate according to the laws of quantum mechanics—which should theoretically be easier to simulate using a quantum computer.

But despite significant advances in quantum computing technology over the past decade, computational ability has lagged behind scientists’ hopes. Many had assumed that increasing the number of computer bits—“qubits,” for quantum computers—would help alleviate the noise problem, but since noise limits accuracy, scientists still haven’t been able to perform many of the computations they would like.

Quantum computers could be powerful and useful, but researchers still struggle with calculations being distorted by “background noise.” A simulation run on IBM’s quantum computer may help scientists better understand this noise, how to address it, and even how to use it to advantage. Credit: Graham Carlow/IBM

“We thought it might be time for a fresh approach,” said co-author Sabre Kais, professor of physics and chemistry at Purdue University. To date, scientists have tried to understand the effect of noise by directly measuring the noise in each qubit. But cataloging such discrete changes is difficult, and, the group thought, perhaps not always the most efficient route.

“Quite often in physics, it is actually easier to understand the overall behavior of a system than to know what each part is doing,” said co-author Zixuan Hu, a postdoctoral researcher at Purdue. “For example, it is hard to simulate what each molecule in a glass of water is doing, but it is much easier to predict the behavior of the whole.” So instead of trying to precisely measure the actual noise, the scientists decided to run a test to get a sense of the overall noise that quantum computers experience.

They picked a particular computation of a molecule displaying quantum behavior, and ran it as a simulation on a quantum computer. Then they tweaked the settings on the problem in several different directions, and kept track of how the noise responded. “By putting this all together, we build a ‘fingerprint’ of the noise as perceived by the simulation that we’re running,” said Mazziotti.

Hu explained that running a computation of a molecule that is already well known helped them tease out the specific effects of the noise. “We know very little about quantum computers and noise, but we know really well how this molecule behaves when excited,” said Hu. “So we use quantum computers, which we don’t know much about, to mimic a molecule which we are familiar with, and we see how it behaves. With those familiar patterns we can draw some understanding.”

This operation gives a more ‘bird’s-eye’ view of the noise that quantum computers simulate, said Scott Smart, a Ph.D. student at the University of Chicago and first author on the paper. The authors hope this information can help researchers as they think about how to

design new ways to correct for noise. It could even suggest ways that noise could be useful, Mazziotti said. For example, if you're trying to simulate a quantum system such as a molecule in the real world, you know it will be experiencing noise—because noise exists in the real world. Under the previous approach, you use computational power to add a simulation of that noise.

“But instead of building noise in as additional operation on a quantum computer, maybe we could actually use the noise intrinsic to a quantum computer to mimic the noise in a quantum problem that is difficult to solve on a conventional computer,” Mazziotti said. The authors believe this unique approach to the noise problem is helpful as researchers continue to explore the young field of quantum computing. “We’re still not even sure what kinds of problems for which quantum computers will be most useful,” Mazziotti said. “We hope this will provide a different way to think about noise that will open up new avenues for simulating molecules with quantum devices.”

<https://scitechdaily.com/scientists-work-to-turn-noise-on-quantum-computers-to-their-advantage/>

