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समाचार पत्रों से चयित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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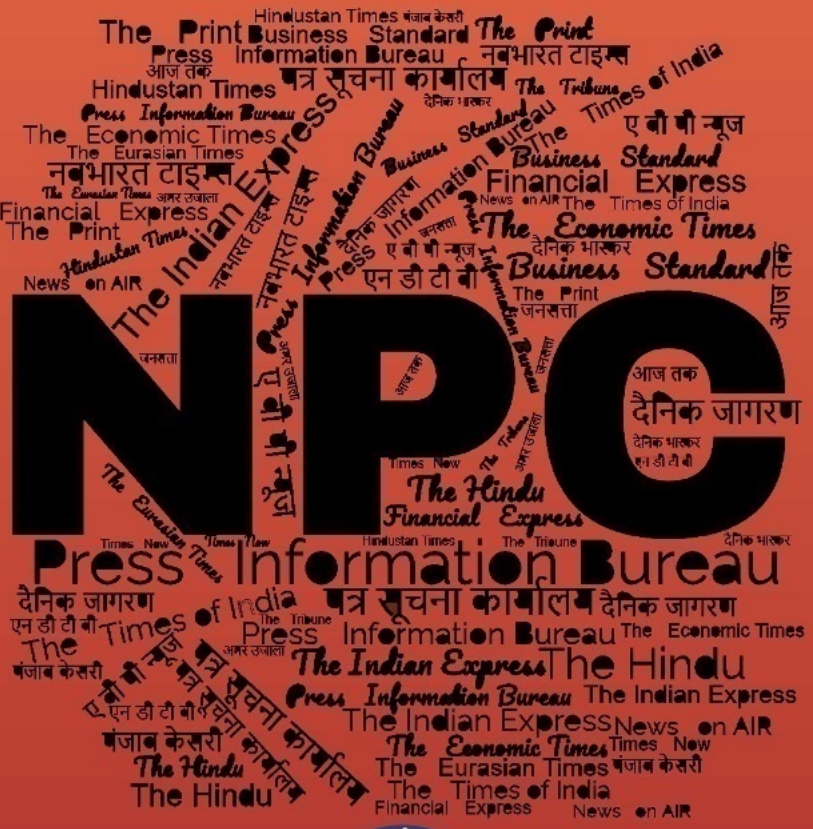

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TIMESNOW

Fri, 24 May 2024

Secretary Department of Defence R&D & Chairman DRDO Visits DRLDRDO Tezpur

Secretary of the Department of Defence R&D and Chairman of DRDO, Dr. Samir V Kamat, along with Director General (Life Sciences), Dr. U K Singh, visited the Defence Research Laboratory (DRL) of the Defence Research and Development Organisation (DRDO) in Tezpur on 23 May.

The distinguished guests were warmly welcomed by Dr. DV Kamboj, Director of DRL, who provided an indepth overview of the laboratory's pivotal role and significant achievements. Dr. Kamboj highlighted DRL Tezpur's expertise in areas such as vector control, water quality enhancement, pharmaceutical technology and bio-waste management. He also outlined the laboratory's new R&D directions, which include soldier support for jungle warfare, signature mitigation and entomological biothreat prediction and mitigation.

Addressing the audience Dr. U K Singh, Director General (Life Sciences), emphasized the importance of establishing collaborations with academia and industry for translational research that directly benefits the Armed Forces. He reiterated the necessity for DRDO, along with its academic and industry partners, to address the challenges faced by soldiers in the forward areas of the Northeast.

Chairman DRDO, Dr. Samir V Kamat, commended the scientists, officers, and staff of DRL for their dedicated contributions. He urged them to reaffirm their commitment to national service by delivering cutting-edge technologies that enhance the nation's strength and self-reliance. Dr. Kamat also stressed the importance of reformation and transformation in optimizing the performance of an R&D organization.

In a significant move, Dr. Kamat handed over the Licensing Agreements for the Transfer of Technology of Anti-microbial bed sheets and Anti-bed bug bed sheets to three industries. Additionally, he released the Annual Report of DRL, which highlights the laboratory's progress and achievements over the past year. This visit underscores the vital role of DRL-DRDO Tezpur in advancing defense technologies and its unwavering commitment to supporting the nation's armed forces.

https://www.timesnownews.com/india/secretary-department-of-defence-rd-chairman-drdo-visits-drl-drdo-tezpur-article-110399217

BusinessLine
THE HINDU

Fri, 24 May 2024

Mafatlal, Merite Exports and Sunil Industries get ToT from DRDO for manufacturing anti-microbial hospital linen

Mafatlal Industries is among the three industries that have been awarded Transfer of Technology (ToT) by the Defence Research and Development Organisation (DRDO) for manufacturing of anti-microbial bedsheets and anti-bed bug sheets for military and private usage.

The other two companies are Merite Exports and Sunil Industries. The DRDO's lab, Defence Research Laboratory (DERL) which is based in Tezpur, Assam, did in-house R&D to come up with these two specialised bedsheets to meet the requirements from the Army and paramilitary forces.

Market reports, however, stated that anti-microbial bedsheets are being manufactured in the country and are exported as well. Such medical linen is available on online shopping platforms.

DRDO Chief Samir V Kamat visited Defence Research Laboratory at Tezpur on Thursday and handed over the licensing agreements for the Transfer of Technology of anti-microbial bedsheets and anti-bed bug bed sheets to the representatives of the three industries. "This visit underscores the vital role of DRL-DRDO Tezpur in advancing defence technologies and its unwavering commitment to supporting the nation's armed forces," said a Defence PRO in Guwahati.

These two products are an outcome of the demand from the services and central armed police force to keep their personnel safe and fit.

Prone to infection

On the need for anti-microbial bedsheets, DRDO said Army barracks are prone to microbial infection due to various reasons including situational and environmental conditions. These find application in hospitals and railways as well.

The bedsheet, a mix in equal proportion of polyester and cotton, has a shelf-life of two years or 20 washes whichever is earlier, as per the DRDO. The bedsheet provides 99 per cent reduction in microbial count even after 20 washes, aided by the chemical content of "Triclosan and CTAB" to keep infection away, said the DRDO.

The Army barracks are also prone to bed bug (Cimex lectularius) infection. Though the material in this bedsheet is polyester and cotton, the chemical used is different. The effectiveness against bed bugs, which are small, flat insects that pose public health risk due to their parasitic nature and blood craving, is 100 per cent without any wash but it still is 80 per cent after 20 washes, said DRDO officials.

According to research carried out by the DRDO, bed bugs, in particular, are resistant to single pyrethroids. It is unknown whether the multiple pyrethroid-impregnated liners are effective and there is limited evidence on insecticides' effectiveness to repel bed bugs.

Bed bug management strategies can include utilising anti-bed bug bed sheets impregnated with various pyrethroids, particularly in defence, railway, and hotel industry, the DRDO explained. Bed bugs were studied by the DRDO and the finding was that they become inebriated after continuous contact to anti-bed bug bedsheets, and die 100 per cent after 96 hours up to 20 washes.

Superbugs pose high threat especially in hospitals, with 40 per cent patients getting infected in intensive care units (ICUs) , another study reported last year stated.

The DRL's new R&D direction include soldier support for jungle warfare, signature mitigation, entomological biothreat prediction and mitigation, the PRO elaborated. The lab's expertise lies in areas such as vector control, water quality enhancement, pharmaceutical technology and bio-waste management.

https://www.thehindubusinessline.com/companies/mafatlal-merite-exports-and-sunil-industries-get-tot-from-drdo-for-manufacturing-anti-microbial-hospital-linen/article68211546.ece

The Arunachal Times

Mon, 27 May 2024

DRDO chairman inaugurates R&D centre in Tawang

Union Defence Research & Development Organisation (DRDO) Chairman Dr Samir V Kamat inaugurated an R&D centre at the defence research laboratory (DRL) in Changbu in Tawang district recently, during a visit here.

Prior to this, he engaged in discussions with senior officers of the Indian Army and paramilitary forces in Tezpur (Assam), Tenga, and other military stations enroute to Tawang from Tezpur.

The chairman and other DRDO officials also visited forward locations of Tawang towards the Indo-Tibet border, and interacted with the jawans and officersthere. The discussions revolved around topics related to soldier support by the DRL and the DRDO with the commanders of the Tawang and East Tawang brigades and officers from the district administration.

The DRDO chairman, who was accompanied by DRDO (HQ) Life Sciences Director General Dr UK Singh, and Tezpur (Assam)-based DRL Director Dr UK Singh, along with other senior officers and scientists of the DRDO, offered prayers at the Tawang monastery before their departure.

https://arunachaltimes.in/index.php/2024/05/27/drdo-chairman-inaugurates-rd-centre-in-tawang/

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Sat, 25 May 2024

CDS Gen Anil Chauhan visits Aircraft and Systems Testing Establishment & Air Force Test Pilots School in Bengaluru

Gen Anil Chauhan presides over the valedictory function of 46th Flight Test Course at AFTPS.

Chief of Defence Staff, Gen Anil Chauhan visited Aircraft and Systems Testing Establishment (ASTE) and Air Force Test Pilots School (AFTPS) in Bengaluru on 24 May 2024. A ceremonial Guard of Honour was accorded and he laid a wreath at the memorial which honours the supreme sacrifice made by the Indian test crew and scientists while undertaking flight testing. As part of his tour, he was briefed on the ongoing trials at ASTE and flight test training activities of AFTPS alongside aspects of the organisational roles of these unique institutions of IAF. He was conducted around the facilities available at ASTE and AFTPS with the demonstration of major indigenous projects as part of Aatmnirbharata and the training infrastructure. The CDS also visited the well-archived ASTE museum which houses artifacts depicting significant historical milestones along the five-decade-long journey of ASTE and AFTPS.

Gen Anil Chauhan presided over the valedictory function of the 46 Flight Test Course, which was conducted at AFTPS. A total of 17 students have graduated. This event was hosted by the ASTE as the traditional Suranjan Das Dinner where not only the graduating students but also their spouses were given a certificate of qualification. Five students were also awarded trophies for their outstanding performance under various categories. The students who were awarded were Sqn Ldr A Berwal with the Suranjan Das Trophy for best Test Pilot , Sqn Ldr Kapil Yadav - CAS Trophy for best flight evaluation, Sqn Ldr V Supriya - Maharaja Hanumanth Singhji Sword for best FTE, Sqn Ldr Rajnish Rai - Kapil Bhargava Trophy for best in ground subjects and Lt Cdr Gaurav Tyagi - Dunlop Trophy for most promising FTE and flight evaluation.

The occasion was also graced by the AOC-in-C Training Command of IAF and veteran test crew. The academic overview and end of course report was presented by the Officer Commanding AFTPS, who highlighted the critical role being played by the institution as the de-facto Centre of Excellence for imparting flight test training to officers of the three services, Indian Coast Guard, HAL, DRDO and friendly foreign nations.

In his valedictory address, the CDS complimented Commandant ASTE and all staff of AFTPS for maintaining the highest standards of training in this niche field and their crucial role in capability building and modernisation of the Indian Air Force, including the upgradation of the military aviation environment of the nation. He congratulated the graduating officers, emphasising the importance of professional competence to meet the quality & safety requirements for operational preparedness, and extolled them to continue to strive hard to achieve higher professional capability in their journey as test crew.

https://pib.gov.in/PressReleasePage.aspx?PRID=2021599

Press Information Bureau
Government of India

Ministry of Defence

Fri, 24 May 2024

CDS Gen Anil Chauhan visits HQ Training Command of IAF in Bengaluru

Lauds the Command for creating synergy among the Services in conduct of the training; Calls for further enhancing joint efforts to efficiently utilise resources

Chief of Defence Staff (CDS) General Anil Chauhan visited the Training Command of the Indian Air Force (IAF) headquartered in Bengaluru, Karnataka on May 24, 2024. He was briefed about the role of the Command, optimisation of training activities and the challenges faced in improving its efficiency in order to enhance the overall operational preparedness of the IAF.

The CDS addressed the functionaries of the command and lauded the efforts of all personnel towards creating synergy amongst the Services in conduct of the training. He also stressed upon the need to further enhance the joint efforts to efficiently utilise the resources of the nation for better training. He urged all officers to continue exhibiting professional excellence towards bolstering the operational might of the country.

Earlier, the CDS was received by Air Officer Commanding-in-Chief, Training Command Air Marshal Nagesh Kapoor.

https://pib.gov.in/PressReleasePage.aspx?PRID=2021532

Press Information Bureau
Government of India

Ministry of Defence

Sun, 26 May 2024

Appointments Committee of Cabinet approves one-month extension in service of Chief of the Army Staff General Manoj Pande up to June 30, 2024

The Appointments Committee of Cabinet, on May 26, 2024, approved the extension in service of Chief of the Army Staff (COAS) General Manoj C Pande, PVSM, AVSM, VSM, ADC for a period of one month, beyond his normal age of superannuation (May 31, 2024), *i.e.* up to June 30, 2024, under Rule 16 A (4) of the Army Rules 1954. He was appointed as the COAS on April 30, 2022. He was commissioned in December 1982 in the Corps of Engineers (The Bombay Sappers). He held the appointment of Vice Chief of the Army Staff before taking over as the COAS.

https://pib.gov.in/PressReleasePage.aspx?PRID=2021712

Press Information Bureau
Government of India

Ministry of Defence

Sat, 25May 2024

Visit To Muara, Brunei By Indian Naval Ship Kiltan

Indian Naval Ship Kiltan arrived at Muara, Brunei on 25 May 24, and was accorded a warm welcome by the Royal Brunei Navy. The visit is part of Operational Deployment of the Indian Navy's Eastern Fleet to South China Sea. This visit is poised to further strengthen the friendship and cooperation between the two maritime nations.

The visit by Indian Naval Ship Kiltan is focused on professional interactions, sports fixtures, social exchanges and community outreach reflecting the shared values of both nations and navies. The visit will conclude with a Maritime Partnership Exercise at sea between the Indian Navy and Royal Brunei Navy. The two navies will undertake tactical evolutions which will bolster interoperability and exchange of best practices.

INS Kiltan is the third of four P28 Anti-Submarine Warfare (ASW) Corvettes indigenously designed and built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.

https://pib.gov.in/PressReleasePage.aspx?PRID=2021634

THE TIMES OF INDIA

Mon, 27 May 2024

NDA introduces AI & ML in syllabus to prepare cadets for future warfare

The National Defence Academy (NDA) has commenced revision of the curriculum to induct subjects such as artificial intelligence (AI), machine learning, cyber, space and information to tackle technologydriven warfare. The internal committees –Inter-Services Study Group (ISSG) and the Academic Study Group (ASG)—are responsible for periodic review of the academic curriculum in the NDA courses.

“The step was taken after looking at the rapid change in warfare and induction of technology-driven operating systems in the armed forces. The early orientation of some of the subjects has become necessary. There, the academy has moved in that direction. The internal committees are working on it at various levels,” a senior official of the NDA said.

“Technological knowledge has become the most essential aspect for military officers. Several systems, equipment and operating methods are embedded with advanced technology such as AI, machine learning, etc. Thus, an early exposure to these subjects for the cadets at the academy level is necessary considering the changing dynamics of the modern warfare,” a senior Naval officer said.

Even the Chief of Army Staff (COAS) General Manoj Pande also addressed needs of technical competency in his speech on the occasion of passing out parade of cadets of the 146th course. He said, “To operate in the battlefield of tomorrow, you need to enhance your technical competency thresholds. So keep your quest to embrace technology and strive for professional excellence.”

The NDA cadets get their degrees in BA or B.Sc or B.Sc (computer science) from the Jawaharlal Nehru University and the All India Council for Technical Education has recognized its B.Tech degree for Indian Navy and Air Force.

NDA’s principal Om Prakash Shukla delivered the academic report of the 146th term during its convocation ceremony. At the convocation, Shukla said, “The hallmark of academic training at the NDA is its continual review and realignment with emerging requirements of the services as well as changing scenarios in the academic world. During the last academic term, several vital issues of academic curriculum have been deliberated as part of the ISSG leading to the enhancement of academic threshold. It includes a thorough revamping of academic syllabi through the forthcoming ASG.”

In line with the chiefs of staff committees directives, developing academic mindset and the spirit of inquisitiveness among cadets are indispensable for future military leaders, he said. “An innovative instruction methodology is being evolved that would emphasize all of these aspects. Furthermore, benchmarking of academic performance has been institutionalized during the last term. It envisages an increased number of caders in the hight-performing brackets,” he added.

With around 32 percent of the caders in the bracket of 75 percent marks and above, the results of this term has been much above the benchmark adopted for academic training, Shukla said.

The NDA has inked a Memorandum of Understanding with IIT, Powai, and the Defence Institute of Advanced Technology (DIAT) to access their online resources, online live lectures, etc. Access to the National Knowledge Network and the Inflibnet are also a value addition.

https://timesofindia.indiatimes.com/city/pune/nda-introduces-ai-ml-in-syllabus-to-prepare-cadets-for-future-warfare/articleshow/110447823.cms

THE HINDU

Sat, 25 May 2024

Army expo to be held in Coimbatore on May 28 and 29

The CODISSIA Defence Innovation and Atal Incubation Centre (CDIIC) and the Indian Army will organise in Coimbatore on May 28 and 29 the “Southern Star Army Academia Industry Interface”.

V. Sundaram, director of the CDIIC, told presspersons on Saturday that the event will have 80 stalls in which the Army and Defence Public Sector Undertakings (PSUs) will display their component, equipment, and spare requirements in 20 stalls and the MSMEs will exhibit their capabilities in the remaining 60 stalls. Almost all the stalls are booked, he said.

The Army, industry, and the academia will come together on the two days and the Army will have panel discussions with the industry and the educational institutions. The CDIIC is currently incubating startups in the Defence space. Students who want to start their venture, get into startups or the Defence sector can understand the needs of the industry and the Army through this event, he said. The Army organised the first edition of this event in Bengaluru.

Drills such as pipe band display, gun drill, army drill, and commando kalari will be held on the two days from 9 a.m. to 4.30 p.m. This will create awareness among the public on the capabilities of the Army, Mr. Sundaram said. The CDIIC, which has about 250 members, will sign Memorandum of Understanding with the Defence PSUs - BEL, BEML, BDL, HAL and IOL.

Through this the CDIIC members will benefit if they want to supply to the Army, he added. V. Thirugnanam, president of the Coimbatore District Small Industries Association (CODISSIA), said the CDIIC has 23 startups apart from

https://www.thehindu.com/news/cities/Coimbatore/army-expo-to-be-held-in-coimbatore-on-may-28-and-29/article68214648.ece

The EurAsian Times

Sat, 25 May 2024

Pakistani Shipyard KSEW Contracted To Build Bigger, Better Warships Close To Indian Navy's Largest Base

Of the 50 surface ships the Pakistan Navy aspires to operate, 20 are expected to be "major surface vessels" like frigates and corvettes.

The move aims to bring some parity with the Indian Navy, whose area of dominance is straddled between the Gulf of Aden in the West and the Malacca Strait in the East. While the Pakistan Navy's operation area is not as vast as its arch-nemesis, it is an important regional navy in the Indian subcontinent.

Pakistan views India's naval build-up as a direct threat, as it gives India significant war-fighting capabilities at sea, which could be a disadvantage for Pakistan during a potential conflict.

An article on the defense website Quwa underscores that Pakistan's defense industry still cannot offer turnkey support for most shipbuilding and naval subsystems. The gaps were identified in the key industrial sectors in Pakistan, such as diesel engines, gas turbines, semiconductors, composites manufacturing, or advanced-grade steel.

The article talks about the Original Equipment Manufacturers taking cognizance of furthering the manufacturing of original systems in Pakistan. "To succeed, OEMs should consider forming partnerships with local vendors responsible for subsystems, such as the state-owned entities, such as Stingray Technologies, for example," the article added.

In the last couple of years, India has embarked on a Make-In-India drive, encouraging the formation of joint ventures between foreign vendors and their Indian counterparts to boost manufacturing capabilities. Recently, German ThyssenKrupp has partnered with Indian shipbuilder Mazagaon Dockyard Limited (MDL), and Spanish Navantia has joined hands with Larsen and Toubro to bid to make AIP-equipped submarines for India.

However, the road for Pakistani firms is not that easy as most of these entities, especially those belonging to the Strategic Plans Division, are blacklisted by the United States. Collaboration with them can put foreign firms in the line of US sanctions.

Nonetheless, Karachi Shipyards and Engineering Works (KSEW) has been forging ahead with its capability augmentation to build bigger and better warships in the future. What is interesting is that, closer to it, India is building a naval base akin to the US Navy's sprawling Norfolk naval base in Virginia.

Project Seabird, christened INS (Indian Naval Ship) Kadamba, is the first operational base with a port controlled exclusively by the Navy. This allows the Navy to position and maneuver its operational fleet without worrying about the movement of merchant vessels.

The Navy's other two operational ports are in Mumbai and Visakhapatnam, located in enclaves within commercial ports. Located on both coasts of India, the movement of warships amidst merchant vessels can be tricky in times of war.

As the Indian Navy cements its position as the first responder in the Indian Ocean Region, INS Kadamba offers it the advantage of being closer to one of the world's busiest sea lanes and is still out of the strike range of Pakistan's fighter jets. It is a natural deep-water harbor that can accommodate an aircraft carrier, destroyers, stealth frigates, and submarines. The main functions of the base include the maintenance, overhaul, and repair of the surface and submarine fleet.

Pakistan's Naval Aspirations

Pakistan laid down its vision for a bigger navy in 2015. In 2015, the first contract was awarded to acquire eight S26 air-independent propulsion (AIP)-equipped Hangor-class submarines (SSP) from China. Under the project, Pakistan would manufacture four boats at KSEW, and the rest would be manufactured at China Shipbuilding Industry Corporation.

The first four boats were to be delivered by 2023, with the last four from KSEW due by 2028. However, financial difficulties and hurdles in getting German approval to export the engine delayed the project. Finally, the first of the eight Hangor II submarines for Pakistan was launched at the Wuchang Shipbuilding yard in Wuhan in April 2024.

The KSEW is undergoing a major capability boost in shipbuilding. One of Pakistan's main shipyards, the KSEW, has begun using a Syncrolift shift lift-and-transfer system. Ordered in 2017, the ship lift allows KSEW to manufacture 13 ships on land and move hulls to dockyards for launching and sea trials.

KSEW has also expanded with a new construction hall and fabrication facility, which will cover all aspects of building larger naval warships and overhaul and integrate new subsystems into older ships.

The KSEW's capability building means it can support vessels of up to 8,000 tons, indicating that it may be eyeing heavier shipbuilding like that of frigates, destroyers, or auxiliary vessels in the future.

The KSEW has already built four Babur-class corvettes for the Pakistan Navy. The first two ships, PNS Badar and PNS Tariq were launched in 2022 and 2023. As per the contract, the two of the corvettes were to be built locally.

The second ship of the class, PNS Badar, was launched by KSEW in May 2022, while the fourth ship is under construction at the Karachi shipyard. The first and third ships of the class are built in Turkey. All four ships will become operational with the Pakistan Navy by 2025.

Satellite images confirmed the sighting of a new small submarine at KSEW. Officially, the Pakistan Navy has given no information about its specifications. However, the midget submarines are expected to conduct shallow water operations and naval Special Forces deployments.

The KSEW will construct Jinnah-class frigates, and the Pakistan Navy has already signed a contract with ASFAT (military factory and shipyard management) to design a new frigate according to its specifications. Under the contract, four ships of the Jinnah class will be built.

The Pakistan Navy has also expressed interest in the Turkish STM-500 Shallow-Water Attack Submarine. These submarines are used for Special Forces deployment and mine warfare

capabilities. The STM-500 was exhibited at the IDEAS 2022 exhibition. Once the deal is signed, the KSEW is expected to build these submarines.

https://www.eurasiantimes.com/jostling-for-space-in-the-indian-ocean/

msn

Sun, 26 May 2024

Estonia Criticises Chinese Cyber Attacks, Seeks Indian Defence Cooperation

Estonia, a country known for its cyber security capabilities, has hit out strongly at Chinese hackers, while welcoming a defence industry delegation from India. Speaking to Times Now, Estonian defence minister Hanno Pevkur said: "In China, there are people professionally hired by the government to do harm. Every country ready to fight this evil is more than welcome in Estonia. We have experience in the cyber field and we have designed some programs. When we have people ready to contribute to the fight."

Pevkur said that he has met members of the Indian defence delegation and appreciated the rise of India's defence industry. He said there was certainly an opportunity and asked members of the delegation to discuss the specific cases with the proper Estonian authorities.

The Indian security establishment has already been in touch with Estonia on cyber issues, the defence minister said. More such exchanges, including the use of cyber platforms, could happen, not only between governments, but also, involving the private sector.

https://www.msn.com/en-in/news/India/estonia-criticises-chinese-cyber-attacks-seeks-indian-defence-cooperation/ar-BB1n2V37

The Indian EXPRESS

Sat, 25 May 2024

China’s military exercises around Taiwan: Power play at sea

On the face of it, the message from China’s military exercise — which included units from the People’s Liberation Army, the PLA-Navy, Air Force and Coast Guard — is unambiguous. According to China’s defence ministry, the drills around Taiwan’s main island are meant to test the military’s ability to “seize power” in key areas — in essence, facilitate an annexation.

The drills, which began suddenly on Thursday, also conducted mock missile strikes targeting key offshore islands as well as strategically and commercially important sea lanes. The provocation is the election of Lai Ching Te — who assumed office on May 20 — as President of Taiwan. Lai is

from the pro-sovereignty Democratic Progressive Party, which Beijing considers a “separatist” group.

It is easy to view the current exercise as a part of the uneasy equilibrium around Taiwan. In fact, similar drills were conducted by China in 2022 and 2023. Beijing keeps rattling the cage to intimidate the significant section of Taiwan’s leadership that is, at least in principle, committed to independence. Taiwan’s leadership has stopped short of forcing a change in the status quo as well.

After all, it has functional de facto autonomy even though China keeps making a de jure claim to its territory. In fact, the military escalation that would inevitably follow any attempt at annexation is bound to inform Beijing’s strategic calculus. Two factors in the current moment, however, complicate this picture and are cause for caution.

It may be that China’s power projection is not merely about intimidation. President Xi Jinping has repeated on numerous occasions that the “re-unification” of China and Taiwan is on his agenda, a likely component of his legacy. He has also refused to rule out the use of force. Even if such a maximalist position is political rhetoric, meant as much for domestic audiences as Taipei and Western capitals, it does not bode well.

Second, military drills and Chinese navy and coast guard patrols do not just project power, they try to assert it. There is little doubt that an expansionist China has been “slicing” territory from its neighbours and trying to expand its zone of influence in the South China Sea and the Indo-Pacific as a whole. This has caused much alarm in littoral states, many of which have deep economic ties with the aggressor. It is in this context of intimidation and expansion that the drills are taking place. Great and middle powers with stakes in the region must keep a close watch.

https://indianexpress.com/article/opinion/editorials/taiwan-china-relations-chinas-military-exercises-around-taiwan-power-play-at-sea-9350531/

JANES

Fri, 24 May 2024

US Army, CAES evaluate new APNT capability for long-range fires

US Army officials and industry counterparts are preparing for a so-called ‘soft catch' test and demonstration of a new Assured Position, Navigation and Timing (APNT) capability, which could play a key role in advancing the ground service's Precision Long Range Fires initiative.

Programme officials from US Army Combat Capabilities Development Command (DEVCOM) and CAES, a Northern Virginia-based company specialising in advanced radio frequency (RF) technologies, will evaluate the survivability and mission validity of the company's Precision Strike Sensor Core APNT system.

“We're actually going to integrate (the system) with a round and fire it, to validate the survivability,” during the test scheduled to take place at Picatinny Arsenal in New Jersey, CAES director of engineering Brian Hetsko said.

If successful, programme officials at CAES plan to proceed with future live fire and captive carry demonstrations of the system at Yuma Proving Ground in Arizona later in 2024, Hetsko told Janes during a 20 May interview.

As designed, the Precision Strike Sensor Core consists of a sensor and programmable transceiver, the former of which provides angle of arrival data – in both azimuth and elevation – of a given precision long-range fires weapons system, Hetsko said.

That sensor data is then relayed to the programmable transceiver, which then provides the range to a given target, he said. “The combination of azimuth, elevation, and range provide a relative position of the platform,” Hetsko added.

https://www.janes.com/defence-news/news-detail/us-army-caes-evaluate-new-apnt-capability-for-long-range-fires#:~:text=US%20Army%20officials%20and%20industry,Precision%20Long%20Range%20Fires%20initiative.

THE ECONOMIC TIMES

Mon, 27 May 2024

North Korea plans to launch a rocket soon, likely carrying its 2nd military spy satellite

North Korea on Monday announced plans to launch a rocket apparently carrying its second military spy satellite by early next week, drawing quick, strong rebukes from neighbours South Korea and Japan. The notification of the planned launch, banned under UN resolutions, came as South Korean President Yoon Suk Yeol and Japanese Prime Minister Fumio Kishida met Chinese Premier Li Qiang in Seoul for their first trilateral meeting in more than four years.

Japan's coast guard said it was notified by North Korea about its planned launch of a "satellite rocket", with safety cautioned in the waters between the Korean Peninsula and China and east of the Philippine island of Luzon beginning Monday and running through midnight June 3. North Korea gives Japan its launch information because Japan's coast guard coordinates and distributes maritime safety information in East Asia.

North Korea's planned launch likely would be an attempt to put its second military spy satellite into orbit. South Korea's military said Friday it detected signs of suspected preparations to launch a spy satellite at North Korea's main Tongchangri launch facility in the northwest. The UN bans North Korea from conducting any satellite launches, viewing them as covers for testing its long-range missile technology. North Korea has steadfastly maintained it has the right to launch satellites and test missiles. It says spy satellites would allow it to better monitor the US and South Korea's moves and enhance the precision-strike capability of its nuclear-capable missiles.

"Any launch (by North Korea) using ballistic missile technology would directly violate U.N. Security Council resolutions and undermine peace and security of the region and world," Yoon said at the start of the meeting with Kishida and Li. "If North Korea presses ahead with its launch despite the international warning, I think the international community must sternly deal with it.'" Kishida said he strongly urged North Korea to cancel the launch plan. China is a North Korean ally, and Li didn't mention the North Korean launch plan. In phone talks earlier on Monday, senior diplomats from Japan, South Korea and the United States agreed to urge North Korea to cancel the launch. South Korea's Unification Ministry separately called a satellite launch by North Korea "a provocation that seriously threatens our and regional security". Last November, North Korea sent its first military reconnaissance satellite into orbit as part of its efforts to build a space-based surveillance network to cope with what it calls increasing US-led military threats.

North Korean leader Kim Jong Un later told a year-end governing party meeting that the country would launch three additional military spy satellites in 2024. Whether the North Korean satellites can produce militarily meaningful imagery is widely doubted, but some civilian experts say operating several satellites could help North Korea monitor big targets at all times.

The latest launch notification to Japan identifies the same danger zones for potential rocket debris as those identified prior to North Korea's last launch. That suggests North Korea would use the same first and second stages of the rocket as before, said Chang Young-keun, a missile expert at the Seoul-based Korea Research Institute for National Strategy. Chang said launching three satellites this year would allow North Korea to obtain imagery on sites in South Korea, Japan and the US Pacific territory of Guam more frequently.

Since 2022, North Korea has been engaged in a provocative run of missile tests to modernize and expand its weapons arsenals, prompting the US, South Korea and Japan to strengthen their security partnership in response.

Experts say North Korea likely believes an enlarged weapons arsenals would increase its leverage in future diplomacy with the US. North Korea wasn't among matters listed on the official agendas for Monday's trilateral meeting between Yoon, Kishida and Li. But during a bilateral meeting with Li on Sunday, Yoon asked China, as a permanent member of the UN Security Council, to contribute to promoting peace on the Korean Peninsula, while speaking about North Korea's nuclear programme and its deepening military ties with Russia, according to Yoon's oce.

South Korea, Japan and the US have long urged China - North Korea's major ally and economic pipeline - to use its leverage to persuade the North to abandon its nuclear ambitions. But China is suspected of avoiding fully enforcing UN sanctions on North Korea and sending clandestine aid shipments to help its impoverished neighbour stay afloat.

https://economictimes.indiatimes.com/news/defence/north-korea-plans-to-launch-a-rocket-soon-likely-carrying-its-2nd-military-spy-satellite/articleshow/110452698.cms

Press Information Bureau
Government of India

Ministry of Science & Technology

Sun, 26 May 2024

Council of Scientific and Industrial Research (CSIR)-Central Mechanical Engineering Research launched Electric Tiller

Dr. N. Kalaiselvi, Director General,Council of Scientific and Industrial Research (CSIR)& Secretary, Department of Scientific and Industrial Research (DSIR) unveiled the Central Mechanical Engineering Research institute's Electric Tiller in Durgapur on 25th May 2024. The CSIR-CMERI's innovative technologyistailored to meet the requirements of small to marginal farmers, who constitute over 80% of the nation's farming community.

These farmers, typically with land holdings of less than 2 hectares, can utilize the electric tiller for various agricultural tasks, benefiting from substantially reduced operational costs. Furthermore, this advancement underscores India's commitment to achieving net-zero emissions and promoting environmentally friendly farming practices.

The Electric Tiller boasts enhanced torque and field efficiency, while also prioritizing user comfort and environmental sustainability. It significantly reduces hand-arm vibration, operates quietly, and produces zero exhaust emissions compared to traditional ICE tillers.

With the potential to decrease operational costs by up to 85%, its user-friendly design supports battery pack swapping and offers multiple charging options, including AC and Solar DC charging.

The tiller also seamlessly integrates with a wide array of standard agricultural attachments such as ridgers, ploughs, iron wheels, and cultivators.It comes equipped with a 2-inch water pump and a trolley attachment capable of carrying up to 500 kg, further enhancing its versatility.

Featuring electronic controls and ergonomic handling, operators can navigate fields with ease, minimizing fatigue and maximizing productivity. The Electric Tiller from CSIR-CMERI marks a significant milestone in agricultural machinery, paving the way for a more sustainable and efficient farming future.

https://pib.gov.in/PressReleasePage.aspx?PRID=2021665

ThePrint

Fri, 24 May 2024

Big projects, joint lunar station — ISRO chairman on potential of India-US space collaboration

Strengthening ties between India and the US in the space sector has the potential to lead to large-scale missions to the Moon and even a joint lunar observatory in the future, Indian Space Research Organisation (ISRO) Chairman S. Somanath said at an Indo-US commercial space conclave in Bengaluru Friday.

Such ambitions require the "highest levels of support", which is "very clearly coming from the leadership in both nations", said Somanath. With US Ambassador Eric Garcetti also in attendance, Somanath said that "after PM [Narendra] Modi, now [US President Joe] Biden is accelerating new collaborations in critical space technology. We are taking this forward at a much greater pace than ever before."

At the event, organised by the US-India Business Council and attended by members of traditional and new space companies, Somanath and Garcetti also confirmed several previously announced joint missions, such as cooperative work on the upcoming NISAR (NASA-ISRO Synthetic Aperture Radar) mission for Earth observation, the ongoing training of two Indian astronauts at NASA facilities for a two-week-long flight one of them will make to the International Space Station later this year, and prospective collaboration on missions to the Moon under the Artemis Accords. Somanath also confirmed that ISRO has a mandate to build a space station by 2035 and land a human on the Moon by 2040.

Speaking of private industry cooperation in space activities of both nations, Somanath referred to the upcoming GSAT 20 communication satellites, which SpaceX is preparing to launch, adding that ISRO is also currently in talks with Boeing and other private companies for launches.

Somanath also added that the privatisation of LVM3 (Launch Vehicle Mark 3) production, announced by NewSpace India Limited (NSIL), ISRO's commercial arm, is the right way to go for reducing costs and making launch vehicles accessible to the global industry.

Garcetti, who also recalled the longstanding ties between ISRO and NASA going back to the times of Vikram Sarabhai, called attention to the more than 173 cooperative technology projects between India and the US through joint working groups, including those in the defence sector like the Indus X programme and air travel. He also added that the approach towards collaborative space projects focuses on peace, prosperity, the planet and people.

Earlier in the day, Garcetti, during a formal visit to the ISRO headquarters, discussed ongoing collaborative projects with Somanath. The two discussed future programmes such as professional exchange visits, the continuation of balloon experiments, and the need to address access to critical components and items to expedite collaborative missions.

They also discussed NASA's participation in India's proposal for a G20 satellite for monitoring the Earth's environment and climate change. India has also proposed an advanced imaging

spectrometer satellite as a follow-up mission for NISAR. The Gaganyaan cargo module, as an option for cargo transfer to the International Space Station in the future, was discussed, too. Meanwhile, the US ambassador has also proposed a QUAD satellite as a partnership between four countries, a project that will include and benefit India.

https://theprint.in/science/big-projects-joint-lunar-station-isro-chairman-on-potential-of-india-us-space-collaboration/2100406/

Hindustan Times

Sat, 25May 2024

NASA's PACE satellite will tackle the largest uncertainty in climate science

Small things can have big effects. Take the plant plankton that populates the Earth's oceans. When zooplankton eats them, the phytoplankton releases a chemical called dimethyl sulphide (DMS) and it is this that people are referring to when they speak of the "smell of the sea". Chemical reactions in the atmosphere turn DMS into sulphur-containing particles that offer a surface for water vapour to condense on. Do that enough times and the result is a cloud. Clouds, in turn, affect both the local weather and, by reflecting sunlight into space, the world's climate.

Other tiny things have similarly extensive effects. Sulphur from ships' funnels also makes particles that seed clouds, producing strings of puffy white "shiptracks" that can be seen in satellite pictures. Soot from burning fossil fuels, meanwhile, has the opposite effect. It is made of dark particles that absorb solar energy, warming the air around them and discouraging cloud formation. If sulphur particles make it high enough in the atmosphere (thanks to a volcanic eruption, perhaps) they can form a haze that blocks some sunlight from reaching Earth's surface.

But although scientists know in general terms how these processes work, quantifying them is much harder. Uncertainties about the behaviour of "aerosols", as various small particles in the air are collectively known, are one of the main sources of scientific uncertainty in climate models. They are therefore a big reason for the error bars that surround projections of how hot Earth will become for a given increase in the amount of carbon dioxide in its atmosphere.

Climate scientists hope that NASA's new satellite, PACE (for "Plankton, Aerosol, Cloud, ocean Ecosystem"), which was launched into Earth orbit on February 8th, will reduce those uncertainties around aerosols. PACE's cameras will sweep the planet every one to two days to create a continually updated census of the very small things that are suspended in the oceans (plankton) and the air (aerosols).

PACE's main camera is sensitive to the spectrum of light between the ultraviolet and the near infrared. For the oceans, that means PACE will be able to distinguish different types of phytoplankton. "That is powerful because diatoms fuel fisheries [and] cyanobacteria can be harmful," says Jeremy Werdell, an oceanographer at NASA who is PACE's chief scientist. Two other instruments mounted on PACE will offer information about the size and shape of aerosols, making it possible for the first time to distinguish soot from sea spray and particles produced by burning fossil fuels.

That could be "transformative" for climate models, says Gavin Schmidt, a climate scientist who also works at NASA. Modellers have had to compensate for the limited nature of the existing

aerosol data with informed guesswork. As a result, different climate models vary considerably in their estimates of how powerfully aerosols affect the climate.

Such uncertainties affect questions about how air pollution influences climate change. Laws in Europe and North America have cut the amount of air pollution from fossil fuels since the 1980s. This is a boon for human health. But it has also lifted a smoggy veil that was masking some of the warming caused by greenhouse gas emissions. Cleaning up air pollution could be one of the most important influences on the climate in the coming decades. Better data will allow better modelling.

Similarly, climatologists are divided on the effect of rules adopted by the International Maritime Organisation, part of the United Nations, which capped the amount of sulphur in ship fuel starting in January 2020. Some believe the reduction in sulphur in ship exhausts may have contributed to the exceptionally hot temperatures recorded around the world in 2023. Others think the effect was minimal.

There are plenty more questions climatologists would like answered. Scribbled on the whiteboard in Kirk Knobelspiesse's office at NASA's Goddard Space Flight Centre in Greenbelt, Maryland, is a list of 18 projects. It ranges from gathering live data on volcanoes and forest fires to answering what happens when soot from agricultural clearing fires that burn annually in west Africa ends up on the tops of marine clouds, darkening the face they present to the sun. The answers to all those questions depend on the behaviour of tiny things. After decades of uncertainty, answers may be on the way.

https://www.hindustantimes.com/science/nasas-pace-satellite-will-tackle-the-largest-uncertainty-in-climate-science-101716067365601.html

The Indian EXPRESS

Mon, 27 May 2024

LVM3 commercialisation is a big step forward, at right time for India, say experts

ISRO's recent invitation to private firms to build India's heaviest rocket is a long-awaited step to ensure greater participation of the private sector in the country's space programme. And it will help India emerge stronger in the international space market amid a rapidly-increasing demand for satellite launches, according to experts The Indian Express spoke to.

Earlier this month, ISRO's commercial arm, New Space India Limited (NSIL), invited applications from private firms for "end-to-end" manufacturing of Launch Vehicle Mark-III or LVM3, the rocket that was used in the Chandrayaan-2 and Chandrayaan-3 lunar missions. Previously called GSLV-MkIII, the LVM3 is ISRO's most powerful rocket so far. It can carry up to 4-tonne satellites into the geostationary orbit and up to 8-tonne satellites into the lower earth orbits.

According to the offer, ISRO's plan is to have a 14-year collaboration with the selected private entity. The first two years would be the "development phase" for transfer of technology and know-how and then, over the next 12 years, it is envisaged that the private partner would be able to build four to six LMV3 rockets each year.

“With the commercialisation of LVM3, Indian companies will now have a wider array of launch vehicles to offer in the global market. It will increase the country’s share in the global market,” Lieutenant General Anil Kumar Bhatt (retd), director general, Indian Space Association, told The Indian Express.

And, Lt Gen Bhatt added, it will allow ISRO to focus on the NGLV (Next Generation Launch Vehicle), a much bigger launch vehicle being developed as part of India’s vision to set up its own space station and send an Indian to the Moon.

Akshat Johri, assistant general manager of IIFCL, a government-owned project advisory company which has assisted NSIL in finalising the commercialisation procedures, said the decision to allow private manufacturing of LVM3 has come at a “very opportune moment”. “As of now, Falcon 9 of SpaceX is the only significant launch vehicle taking heavy payloads to space. Chinese launch vehicles are busy with their country’s own missions and Russian vehicles like Soyuz are not being used by many due to war-related sanctions. The Ariane Group (of Europe) is still testing its new Ariane 6 rocket, after having retired Ariane 5 in July last year, and JAXA of Japan has just finished testing its H3 rocket.

“This is a very opportune moment for India to grab some space for LVM3. There is a growing market for satellites in the lower earth orbits as well,” he said.

Besides the LMV3, ISRO has also given private players a chance to make the recently developed Small Satellite Launch Vehicle (SSLV) and its main workhorse, PSLV. The first privately manufactured PSLV is likely to take flight in August this year.

https://indianexpress.com/article/technology/science/lvm3-commercialisation-is-a-big-step-forward-at-right-time-for-india-say-experts-9353776/