November
2022

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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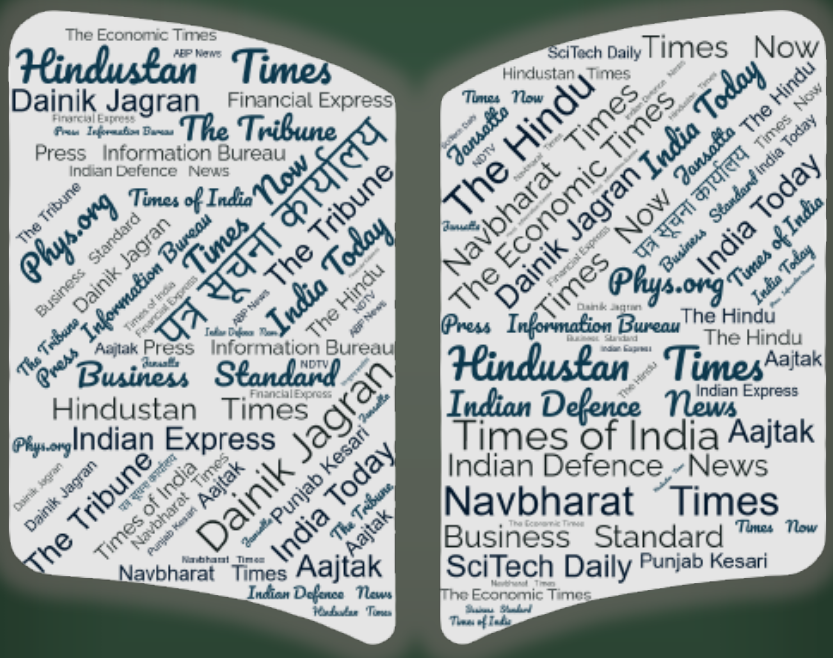

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THE HINDU

Mon, 21 Nov 2022

Expert Talk on 'Infra Red Signatures and Technologies' Organised at NSTL in Visakhapatnam

A Lab Science Council Meeting of Naval Science & Technological Laboratory (NSTL) was held at NSTL premises on Monday.

As part of the ongoing series of technical talks, being arranged by Lab Science Council, Dr. Kamal Nain Chopra, Scientist G (retired), Laser Science & Technology Centre (LASTEC), Delhi, delivered an expert talk on "Infra Red Signatures and Technologies."

NSTL Director Y. Sreenivas Rao presided over the programme. Senior scientists P.V.S. Ganesh Kumar, B.V.S.S. Krishna Kumar and A. Srinivas Kumar, officers and staff of the NSTL participated in the programme.Dr Kamal Nain Chopra served in DRDO for 33 years and superannuated as Scientist G from LASTEC. Subsequently, he served as Professor of Physics in NSIT (DU) and MAIT (GGSIPU).

https://www.thehindu.com/news/cities/Visakhapatnam/expert-talk-on-infra-red-signatures-and-technologies-organised-at-nstl-in-visakhapatnam/article66165227.ece

Defence News

Defence Strategic : National/International

नवभारत टाइम्स

सोमवार, 21 नवंबर 2022

सेना को चाहिए 7000 बॉडी कैमरे, 1612 बैलेस्टिक शील्ड

Poonam.Pandey@timesgroup.com

नई दिल्ली: भारतीय सेना को कश्मीर में काउंटर टेररिज्म में तैनात सैनिकों के लिए शरीर पर पहनने वाले कैमरे (बॉडी वॉर्न कैमरे) और बैलेस्टिक शील्ड चाहिए। इसके लिए सेना ने सोमवार को रिक्वेस्ट फॉर प्रपोजल (RFP) जारी किया है। सेना को 7000 बॉडी कैमरों और 1612 बैलेस्टिक शील्ड की जरूरत है। ये खरीद इमरजेंसी प्रॉक्योरमेंट के तहत फास्ट ट्रैक मोड में की जाएगी। आरएफपी का मतलब है कि वेंडर्स अब प्रपोजल देंगे और जो कॉस्ट और क्वॉलिटी के हिसाब से सिलेक्ट होगा सेना फिर उससे खरीद करेगी। सेना को इमरजेंसी खरीद करने की पावर 2016 में उरी अटैक और फिर हुई सर्जिकल स्ट्राइक के बाद दी गई है। 2019 में बालाकोट एयरस्ट्राइक के बाद भी रक्षा मंत्रालय ने सेना को इमरजेंसी खरीद की पावर दी। 2020 में जब ईस्टर्न लद्दाख में एलएसी पर चीन के साथ गतिरोध हुआ उसके बाद यह पावर सेना को दी गई। इमरजेंसी खरीद की पावर मिलने से सेना 300 करोड़ रुपये तक के वेपन सिस्टम तुरंत खरीद सकती है और इसके लिए किसी और क्लियरेंस की जरूरत नहीं होती, इससे खरीद की प्रक्रिया में कम वक्त लगता है। सेना के एक अधिकारी के मुताबिक बॉडी कैमरा काउंटर टेरर ऑपरेशन में शामिल राष्ट्रीय राइफल्स के सैनिकों के साथ ही मिलिट्री पुलिस के लिए भी चाहिए जबकि बैलेस्टिक शील्ड राष्ट्रीय राइफल्स के सैनिकों के लिए चाहिए। कश्मीर में आतंकियों के साथ मुठभेड़ में और काउंटर टेरर ऑपरेशन में बैलेस्टिक शील्ड यानी बुलेटप्रूफ शील्ड काफी कारगर होंगी और इससे सेना आतंकियों के खिलाफ ऑपरेशंस में सैनिकों की जान का नुकसान बचा सकती है।

THE HINDU

Mon, 21 Nov 2022

Army Issues RFPs for Ballistic Shields and Body-Worn Cameras

The Army on Monday issued two Request For Proposals (RFP) for procurement of 7,000 body-worn camera systems and 1,612 ballistic shields to be procured under Emergency Procurement (EP) through the fast-track procurement (FTP) route. The last date for bid submission for both the RFPs is December 20, 2022.“The body cameras are for both the military police as well as Rashtriya Rifles engaged in counter-terrorist operations in Kashmir valley. The ballistic shields are meant for counter-terrorism operations,” a defence official said. The ballistic shields would be very helpful in preventing casualties in room interventions during anti-terror operations, the official added.

Emergency financial powers were granted to the armed forces by the Defence Ministry in the past on three occasions, post the Uri surgical strikes in 2016, the Balakot air strike in 2019 and the 2020 standoff with China in eastern Ladakh. Under the FTP route, the forces can procure weapons systems upto Rs. 300 crores on an “urgent basis without any further clearances to cut short the procurement cycle.”Three tranches of EPs were executed under which 68 contracts worth Rs. 6,000 crores were placed and the fourth EP for indigenous equipment is underway, Army chief General Manoj Pande had said at DefExpo-2022.The ballistic shields should have a minimum indigenous content of 50% and the manufacturer should provide a 60 months warranty for the ballistic shield and 24 months for the harness, the RFP said. The shield should have a service life of five years.

The shield should be of ambidextrous design with height not less than 860 mm and width not less than 520 mm. The weight should not be more than 20 kg plus 5%, including ballistic view port and accessories attached to the shield. “It should be provided with support harness to enable hands-free carriage of ballistic shield while ensuring unhindered usage of personal weapon and balanced weight distribution once fully worn,” the RFP stated.The body-worn camera (BWC) is a small audio and video recording device which is worn and attached to the uniform, usually on the chest and used to capture real-time video and images when the soldier wearing it is present at an incident or operation site, the RFP said in a description of the camera.

The camera should be compact in size and light in weight about 200 gms and have battery life for up to 12 hours video recording. The recording should have two independent video streams for local record and remote view, the RFP said, adding that it should burn in date, time, device ID, officer ID and location.It should be able to operate in conditions from —20°C to 45°C and support encryption. “Encrypted video should be only played in special player. Data on camera should not be editable,” the camera said. In the last two months, the Army has issued several RFPs, including those for 163 high altitude logistic drones, 1,000 surveillance copters and 80 mini Unmanned Aerial Vehicles (UAV) among others.Under FTP, deliveries should start in six months from the signing of the contract and be completed in one year.

https://www.thehindu.com/news/national/army-issues-rfps-for-ballistic-shields-and-body-worn-cameras/article66164832.ece

Hindustan Times

Tue, 22 Nov 2022

CDS Gen Chauhan Begins Work on Military Theatre Commands

On October 22, CDS Gen Anil Chauhan had an intensive discussion with the three service chiefs at NDA in Pune over the proposed military theatre commands. The three chiefs were given three months to build consensus among themselves by ironing out inter-service differences.With Gen Anil Chauhan settling into his job as the principal military advisor to Narendra Modi government, the second Chief of Defence Staff (CDS) has started building consensus among the three services over the proposed creation of military theatre commands.It is understood that a detailed discussion was held between the CDS and the three services chiefs—Gen Manoj Pandey, Admiral R Hari Kumar and Air Chief Marshal V R Chaudhari—on the proposed commands on October 22 at NDA at Khadakvasla in Pune on October 22.

The new CDS took the three chiefs to Khadakvasla to remind them of their beginnings at National Defence Academy (NDA) and the need to synergize military operations in future as the country's focus is shifted to China as the principal threat from Pakistan. It is learnt that CDS Chauhan let the three chiefs speak about their perspective on the military theatre commands in detail in a bid to build consensus among themselves. Gen Chauhan belongs to the 58th course of NDA, while the three chiefs passed out from the 61st group. The new CDS also has a distinct advantage: as during his tenure as military advisor to the National Security Council Secretariat, he was made a member of the high-powered China Study Group.

Although the new CDS does not want to impose theatre commands on the three services, he has given them three months to streamline their perspectives over the issue as theatre commands cannot be delayed any longer. It is learnt that Gen Chauhan believes in bottom to top approach---that is by promoting joint man ship from the soldier rather than imposing a theatre commander on the top without basic architecture and war doctrine. China has five theatre commands under the Central Military Commission headed by President Xi Jinping. The entire 3488 km Line of Actual Control with India is covered by Western Theatre Command with dedicated army, air force and naval assets (if required).

While the Army and Navy are prepared for the creation of theatre commands, the Indian Air Force has legitimate concerns over splitting its limited air assets among the respective theatres. However, the air warfare now has evolved from manned fighter planes to armed drones and kamikaze drones with most advanced and long range surface to air missile systems like the Iron Dome and S-400, the air force will have to rethink its war doctrine. The on-going Ukraine was has shown that despite having a massive air force, the Russian Air Force is still to achieve dominance over Ukraine air space and is vulnerable to shoulder fired Stinger missiles. The Ukraine war has shown the power of stand-off weapons with the Indian national security planners working on creating a separate rocket and missile command under the Air Force. Besides missiles, the armed drones have also wreaked havoc in the Ukraine war with Russia using Iranian drones for targeting key infrastructure within the Central European nation.

Whatever be the inter-services reservations, the answer to coordinated and rapid military response lies with a military theatre commander with ground, air and sea assets under his disposal so that fast decisions can be taken and communicated to troops on ground.
https://www.hindustantimes.com/india-news/cds-gen-chauhan-begins-work-on-military-theatre-commands-101669053040023.html

Hindustan Times

Mon, 21 Nov 2022

Indian Army, IAF Conduct Military Exercise 'Shatru Naash' in Rajasthan

The Indian Air Force's Sukhoi-30 MKI fighter jets hit the targets using laser-guided bombs. The defence choppers can be seen in the video firing at the targets. One can see a huge cloud of smoke and dust emanating from the destroyed targets.Rajasthan's Sriganganagar witnessed a mega show of strength by the Indian armed forces during its exercise named 'Shatru Naash' (destroy the enemy).The army and the Indian Air Force carried out drills ranging from destroying targets through laser guided bombs to decimating enemy bases using missiles during the exercise, the video of which has gone viral. One can listen to the commentaries in the background of the video shared by news agency ANI.

The Indian Air Force's Sukhoi-30 MKI fighter jets hit the targets using laser-guided bombs. The defence choppers can be seen in the video firing at the targets. One can see a huge cloud of smoke and dust emanating from the destroyed targets.During the military exercise, the army's tanks and missile-laden vehicles also took part. The tanks equipped with radars also participated in the military drill in the border state. The military exercises are being held at a time when the standoff with China continues.

https://www.hindustantimes.com/india-news/indian-army-iaf-conduct-military-exercise-shatru-naash-in-rajasthan-video-101669048495439.html

THE ECONOMIC TIMES

Mon, 21 Nov 2022

IAF Upgrading Radar Coverage along China Border in Eastern Ladakh, Northeast

India is upgrading its radar coverage along the border with China from Ladakh to Arunachal Pradesh as the Indian Air Force is moving ahead with over Rs 10,000 crore plans to further enhance the capability to monitor activities across the Line of Actual Control.The force is in the process of installing new radars to keep an eye on Chinese Air Force activities in the Ladakh sector, defence sources told ANI.Proposals worth over Rs 10,000 crore are at an advanced stage in the Defence Ministry for the acquisition of high-powered radars and around 20 low-level transportable Ashwini radars under Make in India in defence, the sources said.

Sources said the radar coverage on the western front in Rajasthan, Punjab and Gujarat sector is relatively easy but from Jammu and Kashmir on the western front up to Arunachal Pradesh in the northeast is very difficult due to the mountainous region and improving radar coverage has become important in view of suspicious activities by the adversary on the eastern front.The Chinese Air Force had started probing Indian responses to its violations in the Demchok sector in Ladakh by sending its fighter planes beyond the 10-km CBM line.

The Indian Air Force responded in a strong manner by scrambling its fighter jets to the Demchok sector from nearby air bases.However, the issue was resolved after talks at the division commander-level attended by Indian Air Force representatives and their counterparts from the Chinese Air Force.

https://economictimes.indiatimes.com/news/defence/iaf-upgrading-radar-coverage-along-china-border-in-eastern-ladakh-northeast/articleshow/95667517.cms

Hindustan Times

Tue, 22 Nov 2022

Artillery Guns to Rockets, Army Upgrades Capability in Ladakh

By Rahul Singh

The Indian Army is swiftly upgrading its capability in the Ladakh sector with a variety of weapons and systems including artillery guns, swarm drone systems that can carry out offensive missions in enemy territory, longer range rockets, remotely piloted aerial systems and high-mobility protected vehicles, while also pursuing the development of light tanks for mountain warfare, futuristic infantry combat vehicles (FICVs) and buying new carbines, amid the lingering 30-month standoff with the Chinese army along the Line of Actual Control (LAC), officials tracking the army's modernisation said on Monday.

The army's focus on building combat capability along the contested border with China is part of an overarching plan to steadily enhance its operational readiness to counter any challenge presented by the People's Liberation Army (PLA), said one of the officials cited above, who asked not to be named."Capability development is at the heart of the army's strategy to counter China along LAC. We are following a multipronged approach to strengthen our military posture. Emergency procurements are happening, government clearances for different projects are forthcoming and there is a sharpened focus on indigensiation for capability boost," he said.

The border standoff between India and China erupted in May 2020. While the two sides have had partial success in disengaging rival soldiers from some friction areas on LAC, talks are still on to end the deadlock that has derailed the bilateral relationship. Disengagement of soldiers from all friction points is absolutely essential before de-escalation of the conflict can take place, and, finally, de-induction of troops and weapons."We have covered a lot of ground over the last two and a half years as far as capability development is concerned. A lot of new equipment has already come in and a lot of hardware is planned for induction. We are keeping our guard up to deal with any contingency," said a second official who also asked not to be named.

The army is pursuing a major firepower upgrade in the Ladakh sector, it is modernising its mechanised forces at a rapid pace and also equipping infantry soldiers with new systems to improve their combat capabilities and effectiveness.“China respects strength, and we have to mitigate the China challenge from a position of relative strength. The strength demonstrated by the Indian armed forces along LAC is being observed by China. Thus, it is imperative to enhance our combat effectiveness, operational readiness and defence preparedness along LAC, especially in eastern Ladakh where frontline soldiers from the two armies are in close proximity to each other,” said former director general of military operations Lieutenant General Vinod Bhatia (retd).The army is implementing a raft of plans for the modernisation of its combat arms.

The army’s artillery capability boost covers induction of more 155mm/52-calibre tracked self-propelled K9 Vajra-T guns, additional 155mm/45-calibre Dhanush towed guns, the new 155mm/52-calibre advanced towed artillery gun system (ATAGS), upgraded guns named Sharang, longer range Pinaka rocket systems and precision ammunition, as previously reported by HT. All these projects will boost the Aatmanirbhar Bharat (self-reliant India) campaign.The light tank is another key capability that the army needs to tackle the increased threat that persists along LAC. The future tank has already been named Zorawar after Dogra king Gulab Singh’s legendary general, Zorawar Singh. The army expects the light tank prototype development and trials in three years. It will be packed with cutting-edge technologies including drone integration, active protection systems and superior situational awareness.

New indigenous capabilities for the mechanised infantry include FICVs, night-fighting gear, anti-drone weapons, and intelligence, surveillance and reconnaissance (ISR) platforms. These capabilities will transform the mechanised infantry into a more lethal, agile and integrated force capable of delivering a swift and effective response in battle, officials earlier said.The Indian and Chinese armies have held 16 rounds of military talks so far, but problems at Depsang in Daulet Beg Oldi sector and Charding Nullah Junction (CNJ) in Demchok sector are still on the negotiating table.

https://www.hindustantimes.com/india-news/artillery-guns-to-rockets-army-upgrades-capability-in-ladakh-101669064539857.html

FINANCIAL EXPRESS
Read to Lead

Mon, 21 Nov 2022

Two-Day Conclave by Army Celebrate Role of North East Region in Nation Building

Defence Minister Rajnath Singh stated that development initiatives in the North East have transformed ‘Look East policy’ into ‘Act East Policy’, leading to all round developments in the region, enabling these states to improve trade with South East Asian Nations. He was addressing the two-day conclave on the theme ‘Celebrating Contribution of India’s North East Region (NER) in Nation Building’, organised by Indian Army and State Governments of Assam, Meghalaya, Arunachal Pradesh, Tripura, Mizoram, Manipur and Nagaland as well as North Eastern Zone Cultural Council (NEZCC) at Guwahati, through a video message.

The Defence Minister said that Pradhan Mantri Gati Shakti Master Plan would act as force multiplier in developing infrastructural facilities in North East region. “Whether it is road construction, expansion of railways or improvement of waterways, through Pradhan Mantri Gati Shakti, we are committed to strengthen the pace of development. We have also made a lot of progress in the field of energy. We have ensured the progress in Solar and Hydel Projects, and have done the work of providing electricity in every nook and corner.” Underlining the Telecom revolution made by India by joining select countries where 5G facilities have been introduced, Singh assured the people of expanding the telecom facilities across the North Eastern states, “This will ensure economic development, good governance and public welfare.”

The Defence Minister further said that building of New India can be possible only with Bold Policy Reforms, World Class Infrastructure and Top Class Talent. “Through health, education, environment, sports, rural development, employment and small-scale industries, we are committed to the development of each and every citizen of the North East.” Paying tribute to valour and bravery of many heroes and heroines of North-Eastern region, Singh remembered the way the great commander Lachit Borphukan led the Ahom army in the Battle of Saraighat, against the Mughals. As a part of Azadi Ka Amrit Mahotsav (AKAM) celebrations, Indian Army, under the aegis of HQ Eastern Command organised this two-day Conclave on the theme of ‘Celebrating Contribution of India’s North East Region (NER) in Nation Building’ on Movember 20 and 21 .

As part of the celebration, the brave Veer Naris of the region were felicitated during a special event on 20 November 2022 at Narangi Military Station. About 100 Veer Naris attended the first of its kind outreach program. The celebrations also included the first ever Drone Show at Guwahati. Chief Ministers of Assam, Manipur and Meghalaya, GOC-in-C, Eastern Command Lt Gen Rana Pratap Kalita and other dignitaries were also present in the conclave.

https://www.financialexpress.com/defence/two-day-conclave-by-army-celebrate-role-of-north-east-region-in-nation-building/2873382/lite/

Hindustan Times

Mon, 21 Nov 2022

UAE Foreign Minister Sheikh Abdullah Bin Zayed Al Nahyan Begins 2-Day India Visit

Sheikh Abdullah bin Zayed Al Nahyan, the foreign minister of the United Arab Emirates (UAE), on Monday began a two-day visit to India for consultations on bilateral ties, and regional and global issues.He is accompanied by a senior-level delegation for the official visit, and will hold talks with external affairs minister S Jaishankar.“The visit will be part of regular consultations between the two countries on bilateral as well as global issues of mutual interest,” the external affairs ministry said.

Prime Minister Narendra Modi had visited the UAE on June 28 and met Sheikh Mohammed bin Zayed Al Nahyan. Jaishankar visited the UAE from October31- September 2 to co-chair a Joint Commission Meeting and the Strategic Dialogue with Sheikh Abdullah.The UAE is a key energy supplier and one of India’s most important strategic partners in West Asia. The UAE is also

home to more than three million Indians, one of the largest concentrations of expatriates in the region.

https://www.hindustantimes.com/india-news/uae-foreign-minister-sheikh-abdullah-bin-zayed-al-nahyan-begins-2-day-india-visit-101669017576316.html

THE ECONOMIC TIMES

Mon, 21 Nov 2022

Poland to Put German Patriot Missiles Near Border with Ukraine

NATO allies Poland and Germany have agreed to deploy additional Patriot missile launchers near the Polish border with Ukraine following an offer from Berlin, Poland's defence minister said on Monday."The German Defence Minister confirmed her willingness to deploy the Patriot launcher at the border with Ukraine," Mariusz Blaszczak wrote on Twitter."The version of the system remains to be determined, as does how quickly they will reach us and how long they will be stationed.

Berlin offered Warsaw the Patriot missile defence system to help secure its airspace after a stray missile crashed in Poland last week, Defence Minister Christine Lambrecht told a newspaper on Sunday.The German government had already said it would offer its eastern neighbour further help in air policing with German Eurofighters after the incident, which initially raised fears that the war in Ukraine could spill across the border.The missile that hit Poland last week, killing two people, appeared to have been fired accidentally by Ukraine's air defences rather than to have been a Russian strike, NATO chief Jens Stoltenberg has said.Ground-based air defence systems such as Raytheon's Patriot are built to intercept incoming missiles.

https://economictimes.indiatimes.com/news/defence/poland-to-put-german-patriot-missiles-near-border-with-ukraine/articleshow/95668181.cms

Hindustan Times

Mon, 21 Nov 2022

US Defense Chief 'Welcomes' Chance to Meet China Counterpart

US Defense Secretary Lloyd Austin would welcome the chance to meet his Chinese counterpart Wei Fenghe during an upcoming visit to Cambodia, the Pentagon's spokesman said Monday. Brigadier General Patrick Ryder stopped short of announcing a meeting, but said the United States was in contact with China's defence ministry about the issue. "Secretary Austin has frequently expressed the importance of keeping lines of communication open between the US and China and welcomes the opportunity to meet with his (Chinese) counterpart in Cambodia,"

Ryder said in a statement. Austin last met Wei in June in Singapore on the sidelines of the Shangri-La Dialogue, Asia's largest defence summit.

But tensions between the two sides subsequently spiked over a visit by US House Speaker Nancy Pelosi to self-governing democracy Taiwan, which China claims as its own territory. Beijing and Washington have since moved to lower the temperature, with Chinese leader Xi Jinping meeting with President Joe Biden on November 14 and Vice President Kamala Harris on Saturday.

https://www.hindustantimes.com/world-news/us-defense-chief-welcomes-chance-to-meet-china-counterpart-101669017307305.html

Naval Technology

Mon, 21 Nov 2022

NATO Navies Conduct Maritime Drills to Showcase Collective Defence

The navies of Nato allied and partner nations have deployed their aircraft carriers to carry out various maritime drills, demonstrating the alliance's unity and resolve. Currently underway, the manoeuvres are being held in the Atlantic and the Mediterranean Sea region. It is scheduled to be conducted throughout this month. The exercise aims to showcase the collective defence of the alliance forces and involves the participation of thousands of personnel, warships, aircraft, and carrier strike groups. Aircraft carriers deployed to serve this mission are the UK Royal Navy's (RN) HMS Queen Elizabeth, the Italian Navy's ITS Cavour, the French Navy's FS Charles de Gaulle, and the US Navy's USS George H W Bush and USS Gerald R Ford.

The RN's aircraft carrier along with F-35 stealth fighter aircraft have recently departed from Portsmouth to undertake operations in the North Sea. The US Navy's George H W Bush is operating in the Adriatic waters and the aircraft aboard have conducted deterrence patrols over Poland and Lithuania. Gerald R Ford is on a short visit to Portsmouth in Stokes Bay, Gosport. The warship's arrival in the UK precedes its last deployment alongside Spain, Denmark, Canada, France, the Netherlands and Germany. The other two ships, Cavour and Charles de Gaulle, are operating in the Mediterranean region.

As part of the month-long deployment, all the participating assets and forces are carrying out several training operations, including deck-to-deck aircraft transfers, at-sea replenishment missions as well as anti-submarine and air warfare drills. Nato spokesperson Oana Lungescu said: "The deployments demonstrate our ability to project power across alliance and to rapidly reinforce allies set against context of Russia's war against Ukraine. "These carriers deliver deterrence, and they help keep our sea lines of communication open."

https://www.naval-technology.com/news/nato-navies-collective-defence/

Business Today

Mon, 21 Nov 2022

Spacetech Start-Up Pixxel to Send its Third Hyperspectral Satellite 'Anand' on ISRO Rocket for Earth Imaging

Bengaluru-based satellite start-up Pixxel is gearing up to launch its third hyperspectral satellite into space. To be called 'Anand' (meaning joy), the earth imaging satellite will be launched into space on the Indian Space Research Organisation (ISRO)'s workhorse, the Polar Satellite Launch Vehicle (PSLV) on November 26 from the national space agency's spaceport at Sriharikota off Andhra Pradesh coat. Anand is a hyperspectral microsatellite that weighs under 15 kilos and has a total of over 150 wavelengths that will enable it to capture Earth in a lot more detail than non-hyperspectral satellites with less than 10 wavelengths.

In April, Pixxel became the first Indian company ever to launch a commercial satellite in space on a Falcon 9 rocket of the maverick billionaire Elon Musk founded SpaceX rocket. Hyperspectral imaging analyses a wide spectrum of light instead of just assigning primary colors red, green or blue to each pixel. The light striking each pixel is broken down into several spectral bands to gather more information on the imaged object. "Our hyperspectral satellites are unique in their ability to provide hundreds of bands of information with global coverage at a very high frequency, making them ideal for disaster relief, agricultural monitoring, energy monitoring and urban planning applications," founder & CEO of Pixxel, Awais Ahmed, told Business Today. "They are equipped to beam down up to 50 times more information in unprecedented detail, compared to other conventional satellites in orbit."

The imagery from the satellite can be used to detect pest infestation, map forest fires, and identify soil stress and oil spills among other things. Pixxel has already inked agreements with the likes of global metals and mining major Rio Tinto for the identification of mineral deposits and the Australian precision agriculture firm DataFarming for monitoring active and determining crop issues. Other than generating commercial data, Anand's deployment in space will also help improve the form factor and imaging capabilities for Pixxel's next batch of commercial-grade small satellites. Currently operating with a tea of 100 people, the company eventually plans to put a constellation of hyperspectral satellites in space.

https://www.businesstoday.in/technology/story/spacetech-start-up-pixxel-to-send-its-third-hyperspectral-satellite-anand-on-isro-rocket-for-earth-imaging-353559-2022-11-21

Mon, 21 Nov 2022

ISRO to Launch PSLV-C54 with Oceansat-3 and 8 Nano Satellites on Nov 26

Bengaluru, Nov 20: The Indian Space Research Organisation will launch PSLV-C54/ EOS-06 mission with Oceansat-3 and eight nano satellites, including one from Bhutan, on board from Sriharikota spaceport on November 26. The launch is scheduled at 11.56 am (rpt 11.56 am) on Saturday, said the national space agency headquartered here. Asked about the passengers aboard the rocket, a senior ISRO official told PTI on Sunday: "EOS-06 (Oceansat-3) plus eight nano satellites (BhutanSat, 'Anand' from Pixxel, Thybolt two numbers from Dhruva Space, and Astrocast - four numbers from Spaceflight USA).

The Indian space agency is gearing up for launching the next set of 36 satellites of the UK-based Network Access Associated Ltd (OneWeb) in January 2023 by testing the crucial cryogenic engine of its rocket LVM3.The orbiting of first set to 36 satellites happened successfully on Oct 23 from Sriharikota rocket port in Andhra Pradesh with LVM3 rocket also known as Geosynchronous Satellite Launch Vehicle MkIII (GSLV MkIII). According to the Indian Space Research Organisation (ISRO), the flight acceptance hot test of a CE-20 engine was successfully carried out for a duration of 25 seconds in the High Altitude Test facility of ISRO Propulsion Complex at Mahendragiri.

This engine is earmarked for the LVM3-M3 mission identified for the launch of the next set of 36 numbers of OneWeb India-1 satellites, ISRO said. The cryogenic upper stage of the LVM3 vehicle (C25 stage) is powered by a CE-20 engine working with liquid oxygen and liquid hydrogen (LOX-LH2) propellants combination. This engine develops a nominal thrust of 186.36 kN in vacuum. The major objectives of the flight acceptance test were to confirm the integrity of the hardware, assessment of subsystems' performance and tune the engine for meeting the mission requirements parameters for engine tuning for flight operation.

https://www.news18.com/news/tech/isro-to-launch-pslv-c54-with-oceansat-3-and-8-nano-satellites-on-nov-26-6436351.html

नवभारत टाइम्स

सोमवार, 21 नवंबर 2022

इसरो को मिला प्राइवेट कंपनियों का दम

हैदराबाद स्थित एक अंतरिक्ष स्टार्टअप स्काईरूट एरोस्पेस ने पिछले हफ्ते सतीश धवन अंतरिक्ष केंद्र से अपने विक्रम-एस रॉकेट का पहला परीक्षण किया

प्रणव आर. सत्यनाथ

तीन साल पहले यदि आप स्पेस में रुचि रखने वाले किसी शख्स से यह कहते कि एक प्राइवेट स्पेस कंपनी इसरो की मदद से रॉकेट लॉन्च करने जा रही है तो वह आप पर हंसता और कहता कि यह दूर का सपना है। लेकिन हैदराबाद स्थित एक अंतरिक्ष स्टार्टअप स्काईरूट एरोस्पेस ने पिछले हफ्ते सतीश धवन अंतरिक्ष केंद्र से अपने विक्रम-एस रॉकेट का पहला परीक्षण किया है और चेन्नई की अग्निकुल कॉसमॉस एरोस्पेस कंपनी इस साल के अंत तक अपना पहला रॉकेट लॉन्च करने जा रही है। ये दोनों कंपनियां आने वाले समय में रॉकेट मैन्युफैक्चर्स की दुनिया में एक नई परिभाषा गढ़ेंगी।

स्काईरूट और अग्निकुल देश में रॉकेट लॉन्चिंग की क्षमता बढ़ाने के अवसर खोलेंगी :

- फिलहाल, इसरो हर साल 10 से कम रॉकेट लॉन्च करता है।
- भारत को हर साल दहाई अंकों में रॉकेट लॉन्च करना चाहिए ताकि कमर्शल और सरकारी पेलोड को ऑर्बिट में भेजने के मामले में बराबर के देशों के साथ प्रतिस्पर्धा कर सके।
- छोटे रॉकेट का फायदा यह है कि यह हल्के पेलोड (500 किलोग्राम या उससे कम वजन वाले) को मनचाहे ऑर्बिट में सुविधा के अनुसार छोड़ सकता है।
- यही नहीं, छोटे लॉन्च वीइकल की उत्पादन क्षमता समय और जरूरत के हिसाब से बढ़ाने में ज्यादा दिक्कत नहीं आती है। इसे जल्दी-जल्दी लॉन्च भी किया जा सकता है।
- यदि भारत का प्राइवेट सेक्टर लगातार सफलता पाता है तो बहुत कम समय में भारत का अंतरिक्ष संस्थान पेलोड लॉन्च करने की अपनी क्षमता का लाभ उठा सकता है।

एक दशक पहले तक रॉकेट को बनाने में ज्यादा लागत आने की वजह से रैपिड लॉन्च और सामरिक अंतरिक्ष प्रक्षेपण क्षमताओं को हासिल करना कठिन था। लेकिन अब 3डी प्रिंटिंग कॉम्पोनेंट और कार्बन-फाइबर से बॉडी बनाए जाते हैं। सहज उपलब्धता की वजह से इसकी लॉन्चिग क्षमता में तेजी आई है।

रैपिड लॉन्च का सबसे प्रारंभिक फायदा सेना को होने वाला है। कारण कि आर्म्ड फोर्सेस के लिए स्पेस असेट्स, जैसे कि उपग्रह, अंतरिक्ष स्टेशन, अंतरिक्ष मॉड्यूल, अंतरिक्ष कैप्सूल, अंतरिक्ष यान वगैरह काफी महत्व रखने लगे हैं। युद्ध के दौरान

कॉमन रूम

भारत के संचार और टोही असेट्स को दुश्मन के साइबर हमले, काइनैटिक मारक क्षमताओं या निर्देशित ऊर्जा हथियारों के जरिए नष्ट कर सकते हैं। ऐसे में स्पेस के क्षेत्र में यह उपलब्धि भारत को कई मामलों में सक्षम बना सकती है। दूसरी तरफ देखें तो अन्य मामलों में भी ये उपयोगी साबित हो सकते हैं। जैसे किसी संकट के दौरान सीमाओं की निगरानी के लिए छोटे उपग्रहों की तैनाती आसानी से हो सकती है। इसके साथ ही अंतरिक्ष में संदिग्ध गतिविधियों की सूचना पाने और उस सूचना को पुख्ता करने में भी देश की खुफिया एजेंसियों को मदद मिल सकती है।

वर्तमान में इसरो का स्मॉल सैटलाइट लॉन्च वीइकल (एसएसएलवी) छोटे लॉन्च वीईकल रेंज में एकमात्र रॉकेट है जो 500 किलोग्राम तक के पेलोड को कक्षा में पहुंचाने में सक्षम है। लेकिन इस साल की शुरुआत में इसका तकनीकी प्रदर्शन मिशन फेल हो गया था।

एसएसएलवी ठोस रॉकेट मोटर्स के जरिए संचालित तीन चरणों वाला रॉकेट है। लेकिन त्वरित प्रतिक्रिया के लिए ठोस प्रणोदक रॉकेट की कुछ सीमाएं हैं :

- पहला, ठोस प्रणोदक रॉकेटों की जरूरत सबसे पहले जलवायु नियंत्रित भंडारण सुविधाओं के लिए होती है ताकि समय के साथ प्रणोदक (प्रोपैलेंट) पर दरारें न उभर आएं।
- दूसरा, ठोस-ईंधन वाले रॉकेट अपने तरल-ईंधन वाले समकक्षों की तुलना में अधिक कंपन्न पैदा करते हैं, इसलिए वे संवेदनशील उपकरणों के साथ पेलोड ले जाने के लिए उपयुक्त नहीं हो सकते हैं।
- भारत में प्राइवेट लॉन्च प्रोवाइडर्स को सफलता मिलती है तो यह आने वाले समय में ऑन-डिमांड उत्पादन के लिए अनुकूल होगी।

भारत का अंतरिक्ष क्षेत्र पिछले तीन वर्षों में एक लंबा सफर तय कर चुका है। लेकिन इसे अभी और दूरी तय करना है। भारत को एक संपन्न अंतरिक्ष शक्ति बनाने के लिए निजी क्षेत्र की क्षमता का दोहन अनिवार्य है।

(लेखक तक्षशिला इंस्टिट्यूशन में रिसर्च एनैलिस्ट हैं)

THE HINDU

Mon, 21 Nov 2022

ISRO to Attempt 200th Consecutively Successful Launch of RH-200 Sounding Rocket on Wednesday

The Indian Space Research Organisation (ISRO) will attempt the 200th consecutively successful launch of the Rohini RH-200 sounding rocket on Wednesday from Thumba. Former President Ram Nath Kovind will be present at the Vikram Sarabhai Space Centre (VSSC) - ISRO's lead unit on launch vehicles - to witness the launch. The launch window is between 11 a.m. and 12 noon, a VSSC official said. Mr. Kovind will address the VSSC community and release a coffee-

table book on the RH-200 rocket. ISRO chairman S. Somanath and VSSC director S. Unnikrishnan Nair will be present. The event is not open to the public, VSSC said.

RH-200 is a solid motor-powered, expendable rocket capable of climbing up to a height of 70 km bearing payloads designed to study the upper atmosphere. An RH-200 had lifted off successfully from Thumba for the 199th time in a row during the World Space Week celebrations in October this year. ISRO has launched more than 1,600 RH-200 rockets so far. The rocket had flown on its 100th consecutively successful mission on July 15, 2015. Along with other Rohini variants like the RH-300 Mk-II and RH-560 Mk-III, this sounding rocket has served as a platform for experiments and new technologies.

https://www.thehindu.com/news/national/kerala/isro-to-attempt-200th-consecutively-successful-launch-of-rh-200-sounding-rocket-on-wednesday/article66164358.ece

नवभारत टाइम्स

सोमवार, 21 नवंबर 2022

नासा के ओरियन कैप्सूल ने चांद से दिखाई धरती, आप कहेंगे- ये तो अंगूठी का नगीना है!

नासा का 'ओरियन' कैप्सूल सोमवार को चंद्रमा पर पहुंच गया। ह्यूस्टन में बैठे उड़ान नियंत्रकों को आधे घंटे के संचार ब्लैकआउट के कारण यह पता नहीं था कि क्या महत्वपूर्ण 'इंजन फायरिंग' तब तक ठीक रही जब तक कि कैप्सूल चंद्रमा के पीछे से सामने नहीं आ गया। पचास साल पहले नासा के अपोलो कार्यक्रम के बाद से यह पहली बार है जब कोई कैप्सूल चंद्रमा पर पहुंचा है और पिछले बुधवार को शुरू हुई 4.1 अरब डॉलर की लागत वाली यह परीक्षण उड़ान काफी महत्वपूर्ण है।

ओरियन के उड़ान पथ में अपोलो 11, 12 और 14 के लैंडिंग स्थल भी शामिल हैं जो मानव पहुंच के पहले तीन चंद्र स्थल हैं। कैप्सूल ने 16 नवंबर को फ्लोरिडा स्थित केनेडी अंतरिक्ष केंद्र से नासा के अब तक के सर्वाधिक शक्तिशाली रॉकेट से उड़ान भरी थी। जैसे ही कैप्सूल चंद्रमा के पीछे से बाहर निकला, इसमें लगे कैमरों ने धरती की एक तस्वीर भेजी। यदि सबकुछ ठीक रहा तो इसे तिरछी कक्षा में रखने के लिए शुक्रवार को एक और 'इंजन फायरिंग' की जाएगी।

11 दिसंबर को लौटेगा धरती पर

धरती पर लौटने से पहले कैप्सूल चंद्रमा की कक्षा में करीब एक सप्ताह बिताएगा। इसे 11 दिसंबर को प्रशांत महासागर में गिराने की योजना बनाई गई है। कैप्सूल में कोई लैंडर नहीं लगा है और इसका चांद से कोई स्पर्श नहीं होगा। इस मिशन के सफल होने पर नासा 2024 में अंतरिक्ष यात्रियों को चांद के आसपास

भेजने के मिशन को अंजाम देगा। इसके बाद नासा 2025 में एक यान को चंद्रमा के दक्षिणी ध्रुव के पास उतारने की कोशिश करेगा।

चांद पर फिर जाएंगे इंसान

धरती से चांद की दूरी 3 लाख 84 हजार किमी है। नासा का लक्ष्य एक बार फिर से इंसानों को चांद पर ले जाना है। इसके लिए आर्टिमिस मिशन चलाया जा रहा है। इस मिशन के तहत पहली महिला और पहले अश्वेत व्यक्ति को चांद की सतह पर उतारा जाएगा। नई टेक्नोलॉजी के जरिए चांद पर खोज होगी। इसके बाद नासा का लक्ष्य है कि चांद से ही मंगल पर पहले एस्ट्रोनॉट को भेजा जाए।

https://navbharattimes.indiatimes.com/world/science-news/nasas-capsule-reached-the-moon/articleshow/95666810.cms