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Press Information Bureau
Government of India

Ministry of Defence

Mon, 18 Sep 2023

A US Delegation Interacts with iDEX Team at IIT Delhi; iDEX Winners & Defence Innovation Start-ups Showcase Cutting-edge Dual-use Technologies

iDEX has revolutionised defence innovation ecosystem in India; Procurement of advanced technologies be given due consideration under INDUS-X, says Under Secretary (Research & Engineering), US Department of Defence

The US delegation, led by Under Secretary (Research & Engineering), Department of Defence Ms Heidi Shyu, met a team of Innovations for Defence Excellence-Defence Innovation Organisation (iDEX-DIO) under Ministry of Defence at IIT Delhi on September 18, 2023. Joint Secretary (Defence Industries Production) & Additional CEO of DIO Shri Anurag Bajpai presented an overview on iDEX to the US delegation, explaining how the initiative is revolutionising the defence innovation ecosystem in India. He highlighted how iDEX is fostering innovation, in critical domains like Artificial Intelligence (AI), unmanned solutions, domain awareness, communications, space, cybersecurity etc. He brought out how technologies developed by iDEX winners are acting as force multipliers for the Services and the innovators are beginning to make their mark globally with their dual-use solutions.

The Joint Secretary brought out that the India-U.S. Defence Acceleration Ecosystem (INDUS-X) initiative will further deepen the strategic technology partnership and defence industrial cooperation between the two sides. He appreciated the momentum in INDUS-X activities and informed that iDEX and Defence Innovation Unit (DIU) teams have finalised two challenges to kick start joint challenges, to be launched soon.

A showcase of select iDEX winners and defence innovation start-ups with cutting-edge dual-use technologies was organised. Deep-tech innovations including on information security & cyber security, AI/Machine Learning-based imaging, maritime technologies, wireless communication, space technologies and advanced sensors were showcased.

Ms Heidi Shyu was highly appreciative of the start-up showcase, and the way the iDEX scheme and stakeholders have revolutionised the defence innovation ecosystem in India. She noted the rapid developments under the collaboration agenda of INDUS-X and suggested that procurement of advanced technologies be given due consideration under INDUS-X.

About INDUS-X

iDEX, in partnership with US Department of Defence, conducted the India-US Defence Acceleration Ecosystem (INDUS-X) event in Washington DC on June 20-21, 2023. The initiative will expand the strategic technology partnership and defence industrial cooperation between the start-up ecosystems, businesses and academic institutions. The first-ever joint technology showcasing by the Indian and US start-ups generated great interest during the INDUS-X Event. The collaboration agenda under the Defence Innovation Bridge includes launch of Joint Challenges, Innovation Partnership Program, Academia partnership, Joint Innovation Fund, establishing of Testing & Certification facilities in India etc. The INDUS-X event found mention in the Joint Statement of the two leaders during the recent bilateral meetings.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1958533>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 18 Sep 2023

2nd Edition of Indian Navy's Naval Innovation and Indigenisation Seminar (Swavlamban-2023)

Hon'ble PM had unveiled the 'SPRINT Challenges' in the July 2022

1106 Proposals Received - 118 Winners Declared

Over 100 developmental agreements between iDEX and the industry concluded

75 prototypes to be Showcased during "Swavlamban-2023"

The 2nd Edition of the Indian Navy's Naval Innovation and Indigenisation (NIIO) Seminar – 'Swavlamban 2023' is scheduled to be conducted on 04 – 05 Oct 2023. In the maiden edition of the seminar, held in July 2022, the Hon'ble Prime Minister launched the 75 challenges for the start-ups/ MSMEs as a part of the 'SPRINT' initiative. The 'SPRINT Challenges', are aimed at giving a boost to the usage of indigenous technology in the Indian Navy, and the Navy is committed to developing at least 75 technologies/ products as part of the 'Azadi ka Amrit Mahotsav'.

(<https://pib.gov.in/PressReleasePage.aspx?PRID=1842449>)

SPRINT is a collaborative initiative being undertaken in conjunction with the Defence Innovation Organisation (DIO) and stands for Supporting Pole-Vaulting in R&D through Innovations for Defence Excellence (iDEX), NIIO and Technology Development Acceleration Cell (TDAC). This initiative has received an overwhelming response with 1106 proposals.

After a detailed examination, 113 winners under the DISC 7 SPRINT category (with grants up to 1.5 cr) and 5 winners in the DISC 7 SPRINT-PRIME category (grants up to 10 cr) were declared, and the development of prototypes is being progressed by all the winners. Conclusion of over 100 developmental agreements between iDEX and industry was achieved, with active engagement of the Indian Navy, iDEX and start-ups/ MSMEs.

Niche technologies are being progressed across the spectrum, including blue-green lasers for underwater applications; Autonomous weaponised swarms and Underwater swarm drones; multiple firefighting aids; introduction of Artificial Intelligence (AI) for various uses and the development of an ultra-endurance small drone for maritime missions.

It is proposed to showcase these 75 prototypes, including a live demo of a few promising technologies, during "Swavlamban-2023", scheduled on 04-05 Oct 23 in New Delhi.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1958527>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 18 Sep 2023

10th Meeting of India-Malaysia Joint Sub-Committee on Defence Science, Technology & Industry Cooperation Held in New Delhi

The 10th meeting of India-Malaysia Joint Sub-Committee on Defence Science, Technology and Industry Cooperation was held in New Delhi on September 18, 2023. The meeting was co-chaired by Joint Secretary (Naval Systems), Department of Defence Production, Ministry of Defence Shri Rajeev Prakash and Under Secretary, Defence Industry Division, Ministry of Defence, Malaysia Mr Eris Jemadi bin Tajudin.

During the meeting, the existing defence research and industry cooperation between the two countries was reviewed and discussions were held on issues pertaining to mutual interest. Both sides explored effective and practical initiatives to further expand the ongoing interactions related to the defence industry sector.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1958622>

Business Standard

Mon, 18 Sep 2023

600 'Vibhav' Anti-Tank Mines with Safety Mechanism Inducted into Army

Six hundred indigenously-manufactured self-neutralising anti-tank mines, known as "Vibhav", have been inducted into the Army to provide mobility kill against all enemy armoured vehicles, officials said on Monday.

The anti-tank mine is made of new-age plastic, which gives it adequate strength and durability to withstand the requirements of storage, handling and operating in varying field conditions, they added.

"It (the 'Vibhav' anti-tank mine) is already in production. It has been completed. It is now in demand. It has been inducted into the Indian Army. Six hundred mines have been inducted (recently)," an official of the manufacturing company told PTI.

Designed and developed completely indigenously in a joint venture with the Defence Research and Development Organisation (DRDO) in India, "Vibhav" is a point-attack anti-tank munition, the officials said.

They said the mines are designed to provide mobility kill against all enemy armoured vehicles.

"Made from new age plastic, the mines have adequate strength and durability to withstand the requirements of storage, handling and operating in varying field conditions," the official mentioned above said.

The munition can be laid both mechanically or manually, he added.

A host of safety and actuation mechanisms have been incorporated in "Vibhav" to make it safe to handle, lethal against targets and reliable, the officials said.

The integrated explosive, mechanical and electronic safety features ensure utmost operator safety, they added.

On the other hand, the lethality of the munition ensures effectiveness against all current and futuristic armoured vehicles, the officials said. The munition also incorporates an electronic anti-handling and anti-lift device (EAHALD) that stays active for 120 days once armed, they said.

"We have made three changes in this mine. It has mechanical timers now. Due to this, after 120 days, it will be self-neutralised. It was not available in the earlier mines," one of the officials said.

The munition is under production by Kalyani Group for the Indian Army. It has a storage life of 10 years with no special storage requirements, he added.

https://www.business-standard.com/india-news/600-vibhav-anti-tank-mines-with-safety-mechanism-inducted-into-army-123091800615_1.html

THE TIMES OF INDIA

Tue, 19 Sep 2023

Indian Army Bolsters Comms with Cutting-edge Technology

In a major move to provide secure satellite-based communications to troops out on long-range patrols along the Line of Actual Control with China as well as Special Forces deployed for "surgical operations", the Army is now fast acquiring different types of advanced hand-held and lightweight suitcase-based Satcom sets.

The Army on Monday inked a deal for over 160 "cutting-edge mobile secure satellite terminals (MSSTs)" with defence PSU Bharat Electronics (BEL), which is the latest in the series of such contracts sealed in recent months, defence ministry sources told TOI.

The contracts inked earlier include ones for over 150 man-portable Ku-band satellite terminals, around 400 S-band hand-held terminals, over 300 S-band manpack terminals and over 80 light vehicle-based Ku-band satellite communication terminals, among others.

"These secure portable terminals, by DRDO and BEL, will be a significant force-multiplier as they offer unparalleled resilient military communication support to troops deployed in remote far-flung areas," a defence ministry source said.

"They will also augment communications for Para-Special Forces while being employed for rapid small-team surgical operations. It's an important step towards leveraging capabilities of Indian SATCOM technologies and advances in the space domain for Army formations deployed in forward and harsh terrain conditions," he added. The older Satcom sets with the Army have become obsolete over the years, with troops on long-range patrols along the 3,488-km LAC often not able to effectively communicate with their operating bases and the military hierarchy.

"Such forward deployed troops have to depend on terrestrial radio and satellite phones, which are not secure and have poor connectivity. The new cutting-edge MSSTs, which cannot be intercepted, will plug this void," said the source.

Overall, the forces are slowly but steadily enhancing their capabilities to fight in the increasingly digitised battlefields of the future. Though the armed forces depend a lot on civilian satellites launched by ISRO, they also have a few dedicated military satellites now.

Moreover, the defence ministry in March last year had also given the nod for the Rs 4,600 crore project for a GSAT-7B satellite for the Army, after earlier approving the Rs 2,236 crore project for the GSAT-7C satellite for the IAF in November 2021. "The advanced GSAT-7B satellite should be operational by 2025-26," a source said.

<https://timesofindia.indiatimes.com/india/indian-army-bolsters-comms-with-cutting-edge-technology/articleshow/103770583.cms>



Mon, 18 Sep 2023

Indian Army Accelerates Arsenal Expansion: ATAGS, BrahMos, and Pinaka Rockets on Demand

The ongoing Russia-Ukraine war underscored the importance of long-range, high-volume firepower as a decisive factor in modern warfare, following which India is intensifying efforts to bolster its artillery and missile capabilities. The goal is to enhance precision-strike capabilities, deploy loiter munitions and swarm drones, and strengthen intelligence, surveillance, and reconnaissance (ISR) capabilities for effective responses against potential adversaries.

India's Army is currently executing a significant capability development plan for its artillery regiments. The procurement process is underway for approximately 300 indigenous Advanced Towed Artillery Gun Systems (ATAGS) and 300 Mounted Gun Systems (MGS). Requests for proposals (RFPs) have been initiated for these 155mm/52-calibre guns, marking a significant step in modernising India's artillery capabilities.

ATAGS contract acceleration

One crucial takeaway from the Russia-Ukraine conflict is the need for enhanced force-survivability measures, emphasising techniques like shoot-and-scoot. Consequently, India is adjusting its artillery modernization plan to prioritise mounted and self-propelled guns that can rapidly change positions on the battlefield.

The contract for the Defence Research and Development Organisation (DRDO)-developed ATAGS, with a striking range of up to 48 km, is undergoing accelerated processing. Tata Advanced Systems and Bharat Forge will be responsible for production. The initial order for 300 ATAGS is expected to grow, as the Army plans to induct "more advanced versions" to meet its total requirement of 1,580 such guns.

Strengthening Missile Capabilities

India is also expanding its missile capabilities, including inducting additional regiments of the BrahMos supersonic cruise missile, which now boasts an extended striking range of 450 km, up from the original 290 km. Plans are in place for an 800-km variant of the BrahMos, along with the

acquisition of the new Pralay conventional ballistic missiles, with an initial order for 100 such missiles.

To diversify its arsenal, the Indian Army is gradually inducting at least six more regiments of the indigenous Pinaka multi-launch artillery rocket systems, supplementing the existing four regiments. These rockets now possess an extended strike range of 75 km, with ongoing trials exploring ranges of up to 120 to 300 km.

Expanding Self-Propelled Capabilities

In addition to artillery upgrades, the Indian Army is moving forward with the acquisition of 100 K-9 Vajra self-propelled tracked guns, renowned for their striking range of 28-38 km. These acquisitions are facilitated through a joint venture between India's Larsen & Toubro (L&T) and South Korea's Hanwha Defence.

Ongoing military tensions with China in eastern Ladakh have led to the deployment of K-9 Vajra regiments equipped with 'winterization kits.' This deployment stems from the 100 K-9 Vajra guns previously inducted for Rs 4,366 crore, underscoring the Indian Army's commitment to maintaining operational readiness in challenging terrains.

Integration of Drones and Surveillance

In addition to artillery and missile systems, India is integrating various drones and surveillance devices to enhance targeting accuracy against enemy positions. Emergency procurement efforts are delivering precision-strike loitering munitions to bolster India's offensive capabilities. Meanwhile, the ongoing reorganisation of surveillance and target acquisition (SATA) artillery units includes the induction of tactical remotely-piloted aircraft, loiter weapon systems, swarm drones, the latest weapon-locating radars, and battlefield surveillance radars.

These initiatives aim to establish an effective, seamless, and networked sensor-to-shooter linkage, strengthening India's overall defence capabilities. The nation's unwavering commitment to enhancing its military capabilities reflects its determination to meet evolving security challenges in an ever-changing global landscape.

<https://www.republicworld.com/india-news/general-news/indian-army-accelerates-arsenal-expansion-atags-brahmos-and-pinaka-rockets-on-demand-articleshow.html>



Mon, 18 Sep 2023

First Batch of CRPF's CoBRA Commandos Deployed in Jammu and Kashmir: Reports

After completing months of training in the forests of Jammu and Kashmir, the first batch group of CoBRA commandos, a unit within the Central Reserve Police Force (CRPF), have been deployed in Kupwara district of the Union Territory. It is pertinent to mention that for the first time since their establishment in 2009 to combat Maoist insurgents, the Commando Battalions for Resolute Action (CoBRA) have been moved out of central and eastern India and sent to Jammu and Kashmir. According to a report by Hindustan Times, an official said, "Some companies of CoBRA were partly removed from Bihar and Jharkhand because of the decline in cases of Naxal violence there. Six months ago, their training started in the jungles of J&K." "The training is over and they have been posted in Kupwara but are yet to be used in any operation so far."

CoBRA commandos were brought to J-K in April

In the Kashmir region, the CRPF is actively engaged in counter-terrorism operations and the maintenance of law and order. CRPF works closely with the Jammu and Kashmir Police and the Indian Army to fulfill these responsibilities. Commandos were sent to Jammu and Kashmir in the month of April. The decision to deploy CoBRA commandos, often referred to as jungle warriors, aligns with the government's strategy to utilize this specialized force in regions where the government has revoked the Armed Forces Special Power Act, said officials.

'CoBRA was set up when India's internal security was threatened'

“CoBRA was set up at a time when India's internal security was threatened by Naxal violence. Over the years, CoBRA teams have neutralised top Naxals. Their operations have led to a decline in Naxal violence. They are experts when it comes to dealing with militants in jungle and hills terrain. The topography is similar in the northeast and Jammu and Kashmir. They will be put to use in such places in the coming years, said officials.

In October 2009, when several Naxalite attacks occurred, then-Prime Minister Manmohan Singh had identified Maoists as India's biggest internal security threat. A few months earlier, in September 2008, the Cabinet Committee on Security had approved the creation of an additional force within the Central Reserve Police Force (CRPF) with the formation of 10 additional battalions.

About CoBRA Commandos

Commando Battalion for Resolute Action (CoBRA) is a specialised force which has been raised for jungle warfare type operations for dealing with Maoists and therefore also known as 'jungle warriors'. CoBRA commandos are trained to traverse a maximum distance of 72 km in a jungle and return to their base on the same day once they have completed their mission. They receive training in helicopter-borne insertions in jungle areas. Before their deployment, CoBRA personnel undergo specialized training in jungle warfare and tactics at a dedicated boot camp located in Belagavi, Karnataka.

the personnel for CoBRA are selected from CRPF as CoBRA is an integral part of CRPF. There are 10 CoBRA Units. They undergo rigorous commando and jungle warfare training before being posted in the jungles. They Are deployed in all left-wing extremists affected areas of Chhattisgarh, Bihar, Odisha, Jharkhand, Madhya Pradesh, Maharashtra, West Bengal, Andhra Pradesh, Assam and Meghalaya.

<https://www.indiatvnews.com/news/india/crpf-cobra-commandos-deployed-jammu-and-kashmir-kupwara-naxal-violence-latest-updates-2023-09-18-893330>



Mon, 18 Sep 2023

India Planning a 175-Ship Navy Fleet to Counter China in Indian Ocean: Report

The Indian Navy has 68 warships on order at the moment, which reportedly is worth around Rs 2 lakh crore. However, the Centre wants to increase India's presence in the Indian Ocean region (IOR), and for that they will have to increase the strength of the Navy fleet.

The Navy currently has 132 warships, combined with 143 aircraft and 130 choppers. It has also managed to procure the Acceptance of Necessity (AoN) approval to add nine submarines, eight next-generation corvettes, two multi-purpose vessels, as well as five survey vessels. All of these will be manufactured within the country.

Based on current calculations, it is expected that the Indian Navy's fleet strength will reach to around 155-160 warships by 2030, Times of India reported.

"The figures are dynamic. But the aim now is to have at least 175 warships — if not 200 — by 2035 for credible strategic reach, mobility and flexibility in the IOR and beyond. There will have to be a concomitant increase in the number of fighters, aircraft, helicopters and drones," a source told the publication.

It is impossible to overlook China's increasing maritime menace. In order to increase its presence in the IOR and the greater Indo-Pacific, the People's Liberation Army-Navy (PLAN) is actively looking for more overseas facilities after Djibouti on the Horn of Africa, Karachi and Gwadar in Pakistan, and now maybe Ream in Cambodia.

"China has inducted as many as 150 warships over the last 10 years. Projections show the PLAN may well reach 555 warships in another five-six years. Chinese aircraft carriers will also begin to operate in the IOR by then," an officer was quoted as saying by TOI.

The Indian Navy, on the other hand, has yet to receive even the preliminary approval for the building of a third aircraft carrier, which will take more than ten years to complete. Instead of a more powerful and economical 65,000-tonne carrier, the argument is now being made for a smaller 45,000-tonne "repeat order" of INS Vikrant, which is still months away from being combat-ready after being commissioned a year ago.

<https://www.deccanherald.com/india/india-planning-a-175-ship-navy-fleet-to-counter-china-in-indian-ocean-report-2690876>

ARMY TECHNOLOGY

Mon, 18 Sep 2023

BAE Systems and Larsen & Toubro Join Forces to Introduce BvS10 to India

In a partnership set to redefine India's military capabilities, BAE Systems and Larsen & Toubro Limited (L&T) have collaborated to usher the BvS10 all-terrain vehicle into India under the "Make in India" programme.

This agreement enhances India's military readiness. The BvS10 adapted for the Indian Armed Forces and rebranded as the BvS10-Sindhu, is poised to demonstrate its versatility and resilience as it undergoes trials scheduled for later this month.

The heart of this collaboration lies in a licensing and manufacturing agreement, empowering L&T as the prime player in the Indian market. Backed by the expertise of BAE Systems Hägglunds, known for producing the BvS10 family of vehicles, L&T will bring this workhorse to the Indian Armed Forces.

Customised for Indian needs

Under the agreement, the BvS10 has undergone upgrades to align with the specific needs of the Indian Armed Forces. This newly refined version, aptly named the BvS10-Sindhu, will roll off the production line at L&T's armoured systems complex, accompanied by integrated logistic support.

Tommy Gustafsson-Rask, managing director of BAE Systems Hägglunds, expressed his confidence in the BvS10's performance, stating, "Our BvS10 all-terrain vehicle will demonstrate the critical capabilities the Indian Army needs when it participates in the trials later this month.

Unsurpassed mobility, flexibility, and the ability to work in extreme climatic conditions are at the core of the BvS10 design. Our teaming with Larsen & Toubro gives us the opportunity to expand into the Indo-Pacific market."

L&T sees this partnership as a catalyst for their Armoured Systems business growth, leveraging their manufacturing and design capabilities in synergy with BAE Systems' experience.

Mr Arun Ramchandani, executive vice president head of L&T Defence, emphasised the suitability of the BvS10-Sindhu for India's challenging terrain and climatic conditions, stating, "The BvS10-Sindhu is the ideal vehicle for the extremely challenging terrain and climatic conditions in which it is proposed to be deployed."

Navigating any terrain

This all-terrain vehicle, on display at DSEI in London this week, showcases its versatility with a mobile short-range air defence system (MSHORAD) configuration. This transformation into a modular fighting vehicle highlights its ability to carry diverse payloads, effectively countering modern threats without compromising armour protection.

The BvS10's articulated mobility provides manoeuvrability across various terrains, including snow, ice, rock, sand, mud, swamps, and steep mountain environments. Its amphibious capabilities allow it to easily navigate flooded areas or coastal waters, ensuring swift deployment of personnel and supplies, coupled with mounted lethality to tackle contemporary threats.

The modular design of the BvS10 allows for reconfiguration to suit various missions. It boasts variants, such as personnel transport, command and control, ambulance service, vehicle repair and recovery, logistics support, situational awareness, and vehicle-mounted lethality, making it an asset for India's defence arsenal.

India's border disputes with China and Pakistan have increased investments in military land vehicles. India has been procuring advanced main battle tanks and armoured vehicles to modernise and strengthen its military capabilities, according to GlobalData's "The Global Military Land Vehicles Market 2023-2033" report.

Notably, the BvS10 is already in service in several European nations. It is on order for the German Army. Additionally, BAE Systems' Beowulf, the unarmored variant of the BvS10, emerged triumphant in the US Army's competition for its cold weather all-terrain vehicle programme in August. The US Army is set to receive 110 of these vehicles over five years.

As the BvS10-Sindhu prepares to face Indian Army trials this September, this partnership between BAE Systems and L&T paves the way for India to embrace defence technology and strengthen its national security. With the BvS10-Sindhu at the forefront, India's military capabilities are primed to reach new heights, ensuring readiness and resilience in the face of evolving threats.

<https://www.army-technology.com/news/bae-systems-and-larsen-toubro-join-forces-to-introduce-bvs10-to-india/?cf-view>



Tue, 19 Sep 2023

‘मेड इन चाइना’ हथियार, पाकिस्तानी आतंकी ग्रुप... भारत के खिलाफ दोनों पड़ोसी मुल्क एक्टिव

भारत के खिलाफ पाकिस्तान बड़ी साजिश रच रहा है. भारतीय सुरक्षा एजेंसियों ने पीओके में छुपे आतंकियों के अलग-अलग ग्रुप की जानकारी जुटाई है, जो घुसपैठ के लिए सही मौके की तलाश में हैं. बीते दिनों से जो तस्वीरें निकल कर सामने आ रही हैं, उससे यही साबित भी होता है कि आतंकी एक ग्रुप के जरिए भारत की सीमा में घुसने की कोशिश कर रहे हैं. लेकिन यहां पर समझने वाली कुछ महत्वपूर्ण बातें हैं.

‘मेड इन चाइना’ हथियारों के जरिये आतंकी साजिश

पाकिस्तानी सेना ‘मेड इन चाइना’ हथियारों के जरिये सीमा पर बड़ी आतंकी साजिश रच रही है. सूत्रों से मिली जानकारी के मुताबिक, पाकिस्तान की आर्मी POK के लॉन्चिंग पैड पर बड़ी संख्या में आतंकियों का जमावड़ा कर रही है. इन आतंकियों की मदद पाकिस्तानी सेना कर रही है.

यही नहीं पाक सेना लॉचपैड के नजदीक कंक्रीट बंकर बनाकर आतंकियों को इन बंकरों में छुपा रही है. जिससे भारतीय सेना की नज़र इन पर न पड़े, और ये आतंकी छिपकर कई दिनों तक इन बंकरों में रह सकें.

जम्मू कश्मीर में आतंकी गतिविधियों को अंजाम देने के लिए अब आतंकियों ने अपना पैटर्न भी चेंज कर लिया है. अब ये आतंकी घात लगाकर कर अटैक कर रहे हैं.

आतंकी अब नक्सलियों के तरीकों को अपना कर आर्म फोर्सेज को निशाना बना रहे हैं और इसका जीता जागता उदाहरण है अनंतनाग में हुई आतंकी घटना. वहीं बीते कुछ समय पहले पुंछ में हुआ आतंकी हमला, जिसमें आतंकियों ने आर्मी की एक गाड़ी को निशाना बनाया था.

आतंकियों के नए पैटर्न से लड़ने के लिए भारत की तैयारी?

कुपवाड़ा में सीआरपीएफ के कोबरा कमांडो का पहला बैच तैनात कर दिया गया है. इस बैच को पहली बार जम्मू-कश्मीर भेजा गया है.

केंद्रीय रिजर्व पुलिस बल के कोबरा कमांडो के पहले बैच ने जम्मू-कश्मीर के जंगलों में प्रशिक्षण पूरा कर लिया है और कुपवाड़ा में तैनात किया गया है. यह पहली बार है कि माओवादी विद्रोहियों से लड़ने के लिए 2009 में बनाई गई कमांडो बटालियन फॉर रेजोल्यूट एक्शन (CoBRA) को मध्य और पूर्वी भारत से हटाकर जम्मू-कश्मीर भेजा गया है. कोबरा की कुछ कंपनियों को बिहार और झारखंड से आंशिक रूप से हटा दिया गया है क्योंकि वहां नक्सली हिंसा के मामलों में गिरावट आई थी. छह महीने पहले, उनका प्रशिक्षण जम्मू-कश्मीर के जंगलों में शुरू हुआ. अब प्रशिक्षण खत्म हो गया है और उन्हें कुपवाड़ा में तैनात किया गया है, लेकिन अभी तक किसी भी ऑपरेशन में उनका उपयोग नहीं किया गया है.

टीवी 9 को मिली जानकारी के अनुसार अब फौज ऐसे हथियारों पर काम कर रही हैं, जिन्हें एक जगह से दूसरी जगह ले जाना बेहद आसान हो. इनमें ऐसी तोपें और रॉकेट सिस्टम शामिल किए जाएंगे जिनकी मोबिलिटी ज्यादा हो यानी जो एक जगह से दूसरी जगह आसानी से जा सकें. यानी फोर्सेज अब ऐसी तोपों और हथियारों पर फोकस कर रही हैं जो वजन में हल्की और किसी भी टैरेन में आ जा सकें. साथ ही दूर बैठे आतंकी और दुश्मन को निशाना बना सकें.

<https://www.tv9hindi.com/india/made-in-china-weapons-pakistani-terrorist-groups-china-pakistan-active-against-india-jammu-kashmir-2115217.html>

Pakistan Secured IMF Loan Post Arms Deal with US on Ukraine: Report

In behind-the-scenes manoeuvring between financial and political elites of Pakistan and the West, secret sales of military hardware by Islamabad to Ukraine enabled it to get out of a financial tight spot by receiving a bailout from the International Monetary Fund earlier this year.

“The revelation is a window into the kind that rarely is exposed to the public, even as the public pays the price. Harsh structural policy reforms demanded by the IMF as terms for its recent bailout kicked off an ongoing round of protests in the country. Major strikes have taken place throughout Pakistan in recent weeks in response to the measure,” said a report from the US magazine Intercept.

It all began with the ouster of Prime Minister Imran Khan in April last year with the involvement of its military and encouragement of the US. The die was cast for his ouster after US State Department diplomats bitterly criticised Pakistan’s “aggressively neutral” stance on Ukraine under Imran Khan and warned of dire consequences if he remained in power. But they promised that “all would be forgiven” if he was removed.

After Khan’s ouster, Pakistan emerged as a useful supporter of the US and its allies in the Ukraine war and that assistance was repaid with an IMF loan, the magazine reported. “The emergency loan allowed the new Pakistani Government to put off a looming economic catastrophe and indefinitely postpone elections — time it used to launch a nationwide crackdown on civil society and jail Khan,” it said.

<https://www.tribuneindia.com/news/world/pakistan-secured-imf-loan-post-arms-deal-with-us-on-ukraine-report-545728>



Taiwan Says Detected 27 Chinese Military Aircraft in its Air Defence Zone

Taiwan's defence ministry said on Tuesday that in the past 24 hours it had detected 27 Chinese air force aircraft including fighter jets entering the island's air defence identification zone, mostly flying to the waters southwest of Taiwan.

Democratically governed Taiwan, which China views as its own territory, has complained in recent years of stepped-up Chinese military activities near the island as Beijing seeks to assert its sovereignty claims.

<https://www.hindustantimes.com/world-news/chinataiwan-conflict-taiwan-says-detected-27-chinese-military-aircraft-in-its-air-defence-zone-101695087349866.html>

Sri Lanka's Defence Ministry Clears Docking of Chinese 'Research' Ship

After over a year, another Chinese ocean research vessel has been cleared by the Sri Lankan Ministry of Defence to dock in the country. The ship, which will likely dock at Colombo, will operate for nearly three months in the east Indian Ocean region.

Chinese "research ships" usually have dual purposes – the primary aim is to scientific exploration but what raises the hackles of other countries is the geopolitical purposes for which they are also deployed. In case of Shi Yan 6, a Chinese statement said the ship will help "strengthen scientific research cooperation and exchanges with countries along the Maritime Silk Road and further realise the integration of science and education for the Belt and Road Initiative."

The ship, "Shi Yan 6" will arrive at Sri Lanka a year after another research ship "Yuan Wang 5" had docked at Hambantota port in August last year. Following the security concerns raised by India and the US, Sri Lanka allowed it to dock but asked it to keep the Automatic Identification System (AIS) switched on within its Exclusive Economic Zone (EEZ) and not conduct any scientific research. The docking had led to a war of words between Indian and Chinese diplomats.

Subsequently, Sri Lanka said it was finalising a "standard operating procedure" for future port calls by foreign research vessels and military craft but it is not known whether the SOP has been finalised or if restrictions, like last time, will be imposed on the Chinese vessel.

Chinese "research ships" have been at the centre of recent maritime confrontations with Vietnam and Taiwan. In May, it was a Chinese research ship Xiang Yang Hong 10 that led the flotilla of five other vessels which entered Vietnam's exclusive economic zone (EEZ). A similar strategy is at play in the waters around Taiwan.

<https://www.tribuneindia.com/news/world/sri-lankas-defence-ministry-clears-docking-of-chinese-research-ship-545580>

Science & Technology News

Aditya-L1 Gets Send off from Earth as ISRO Performs Key Manoeuvre

Aditya L1 spacecraft, India's first space-based mission to study the Sun, got a "send-off" from the Earth after orbiting it since its September 2 launch as it underwent a key manoeuvre in the early hours of Tuesday, ISRO said.

The Trans-Lagrangian Point 1 Insertion manoeuvre marks the beginning of the spacecraft's about 110-day trajectory to the destination around the L1 Lagrange point, a balanced gravitational location between the Earth and the Sun.

"Off to Sun-Earth L1 point! The Trans-Lagrangian Point 1 Insertion (TL1I) manoeuvre is performed successfully. The spacecraft is now on a trajectory that will take it to the Sun-Earth L1 point. It will be injected into an orbit around L1 through a maneuver after about 110 days," ISRO said in a post on X (formerly Twitter).

This is the fifth consecutive time the Indian Space Research Organisation (ISRO) has successfully transferred an object on a trajectory toward another celestial body or location in space, the country's space agency said.

Aditya-L1 is the first Indian space-based observatory to study the Sun from a halo orbit around first Sun-Earth Lagrangian point (L1), located roughly 1.5 million km from earth, which is about one per cent of the Earth-Sun distance.

The Sun is a giant sphere of gas, and Aditya-L1 would study the outer atmosphere of the Sun. It will neither land on the Sun nor approach the Sun any closer.

Since its launch, Aditya-L1, during its journey around the Earth, underwent four Earth-bound manoeuvres on September 3, 5, 10 and 15 respectively, during which it gained the necessary velocity for its further journey to L1.

Upon arrival at the L1 point, another manoeuvre binds Aditya-L1 to an orbit around L1.

The satellite spends its whole mission life orbiting around L1 in an irregularly shaped orbit in a plane roughly perpendicular to the line joining the Earth and the Sun.

Aditya-L1 is expected to arrive at the intended orbit at the L1 point after about 127 days, ISRO had said soon after the launch.

ISRO's Polar Satellite Launch Vehicle (PSLV-C57) on September 2 successfully launched the Aditya-L1 spacecraft, from the Second Launch Pad of Satish Dhawan Space Centre (SDSC), Sriharikota.

After a flight duration of 63 minutes and 20 seconds that day, Aditya-L1 spacecraft was successfully injected into an elliptical orbit of 235x19500 km around the earth.

According to ISRO, a spacecraft placed in the halo orbit around the L1 point has the major advantage of continuously viewing the Sun without any occultation /eclipses. This will provide a greater advantage of observing the solar activities and its effect on space weather in real time.

Aditya-L1 carries seven scientific payloads indigenously developed by ISRO and national research laboratories including Indian Institute of Astrophysics (IIA), Bengaluru, and Inter University Centre for Astronomy and Astrophysics (IUCAA), Pune.

The payloads are to observe the photosphere, chromosphere and the outermost layers of the Sun (the corona) using electromagnetic and particle and magnetic field detectors.

Using the special vantage point L1, four payloads directly view the Sun and the remaining three payloads carry out in-situ studies of particles and fields at the Lagrange point L1, thus providing important scientific studies of the propagatory effect of solar dynamics in the interplanetary medium.

The suits of Aditya L1 payloads are expected to provide the most crucial information to understand the problem of coronal heating, coronal mass ejection, pre-flare and flare activities and their characteristics, dynamics of space weather, propagation of particles and fields.

According to scientists, there are five Lagrangian points (or parking areas) between the Earth and the Sun where a small object tends to stay if put there. The Lagrange Points are named after Italian-French mathematician Joseph-Louis Lagrange for his prize-winning paper -- "Essai sur le Problème des Trois Corps, 1772."

These points in space can be used by spacecraft to remain there with reduced fuel consumption.

At a Lagrange point, the gravitational pull of the two large bodies (the sun and the earth) equals the necessary centripetal force required for a small object to move with them.

<https://www.hindustantimes.com/technology/aditya1-gets-send-off-from-earth-as-isro-performs-key-manoevre-101695075381432.html>



Tue, 19 Sep 2023

On India's First Solar Mission, Aditya-L1 Begins Collecting Data: ISRO

Aditya-L1, India's first space mission to study the Sun, began collecting data by deploying one of the seven instruments on board on Monday, a day before its departure from the Earth orbit, according to Indian Space Research Organisation (ISRO).

The sensors of the Supra Thermal and Energetic Particle Spectrometer (STEPS) sub-system, part of the ASPEX (Aditya Solar Wind Particle Experiment) payload on the spacecraft, have begun measuring fast-moving charged particles generated in processes within the Sun.

"This data helps scientists analyse the behaviour of particles surrounding Earth," the ISRO said in a statement.

Aditya-L1 was launched on September 2 using a polar satellite launch vehicle (PSLV-C57) from Sriharikota just a few days after the successful soft landing of Chandrayaan-3's Vikram Lander on the south polar region of the Moon.

The spacecraft is currently going around the Earth in a 256 km x 121,973 km orbit. Early Tuesday morning, it is scheduled to leave the Earth orbit and start moving towards the L1 (Lagrange 1) point of the Earth-Sun system, the designated location from where it will make observations of the Sun.

The STEPS sensors were activated on September 10 itself, when its orbit around the Earth went beyond 50,000 km, the ISRO said. After the necessary health checks of the instrument, the ground stations have begun collecting data. Data collection by this particular sub-system will continue throughout Aditya's journey to the designated L1 point and even after that.

"Data collected around L1 would provide insights into the origin, acceleration and anisotropy (direction-specific properties) of solar wind and space weather phenomena," the ISRO said.

<https://indianexpress.com/article/technology/science/isros-aditya-l1-missions-starts-collecting-science-data-8945057/>

After its Successful Sun, Moon Expeditions, ISRO Starts Work on Dedicated Polarimetry Mission

India's space agency, ISRO, is preparing to launch its first polarimetry mission, XPoSat, by the end of the year. The mission will study bright astronomical X-ray sources and provide vital information on the nature and behaviour of celestial objects. XPoSat is India's first space mission to measure the polarisation of light and will help scientists understand emissions from black holes, neutron stars, and other challenging astronomical sources. The mission will carry two payloads, POLIX and XSPECT, to measure polarimetry parameters and provide spectroscopic information. This will be the second polarimetry mission in the world, following NASA's IXPE mission.

After the success of India's Moon and Sun missions, the Indian Space Research Organisation (Isro) is now preparing for the country's first (and world's second) dedicated polarimetry mission to study various dynamics of bright astronomical X-ray sources in extreme conditions, providing vital information on the nature and behaviour of celestial objects. This mission is expected to be launched by the end of the year, scientists said.

"The dates for the XPoSat (X-ray Polarimeter Satellite) mission are yet to be finalised but the work around it is progressing at a fast pace," Isro chairman S Somanath said.

XPoSat is India's first and the world's second space mission to measure the polarisation of light. Polarimetry is a powerful tool that allows astronomers to infer information about celestial objects, from passing comets to distant galaxies. Isro scientists explained that the mission is unique and crucial because it will help them understand and measure emissions from various astronomical sources — black holes, neutron stars, active galactic nuclei, pulsar wind nebulae — that are otherwise challenging to study.

Such emissions are mostly tracked by studying the chemical make up (using a spectroscope) and the time it takes them to travel a distance.

"While the spectroscopic and timing information by various space-based observatories provide a wealth of information, the exact nature of the emission from such sources still poses deeper challenges to astronomers. The polarimetry measurements add two more dimension to our understanding, the degree of polarization and the angle of polarization and thus is an excellent diagnostic tool to understand the emission processes from astronomical sources," the space agency said.

The degree of polarization is the proportion of an electromagnetic wave that is polarized while the angle of polarization is the angle at which light of a certain polarization is perfectly transmitted through a transparent surface. Together, they can provide more information about the bodies that emit these waves.

Isro added: "The polarimetric observations along with spectroscopic measurements are expected to break the degeneracy of various theoretical models of astronomical emission processes. This would be the major direction of research from XPoSat by Indian science community."

The mission will carry two payloads — POLIX (Polarimeter Instrument in X-rays) which will measure the polarimetry parameters including the degree and angle of polarization, in medium X-ray energy range of 8-30 keV photons of astronomical origin, and XSPECT (X-ray Spectroscopy and Timing) payload which will give spectroscopic information in the energy range of 0.8-15 keV.

The primary payload, POLIX, developed by the Bengaluru's Raman Research Institute in collaboration with the UR Rao Satellite Centre (URSC) is made of a collimator, a device for producing a parallel beam of rays or radiation, a scatterer and four X-ray proportional counter detectors that surrounds the scatterer.

POLIX is expected to observe about 40 bright astronomical sources of different categories during its lifetime of about five years. This is the first payload in the medium X-ray energy band dedicated for polarimetry measurements.

XSPECT has been designed to provide fast timing and good spectroscopic resolution in soft x-rays. Taking advantage of the long duration observations required by POLIX to measure X-ray polarization, XSPECT will conduct long-term monitoring of spectral state changes in continuum emission, changes in their line flux and profile, simultaneous long term temporal monitoring of soft X-ray emission in the X-ray energy range 0.8-15 keV.

This will be the second such mission in the world, after the National Aeronautics and Space Administration's (NASA's) Imaging X-ray Polarimetry Explorer, or IXPE, which was built to "discover the secrets of some of the most extreme objects in the universe, the remnants of supernova explosions, powerful particle streams spit out by feeding black holes, and more."

IXPE was NASA's first mission to study the polarization of X-rays from many different types of celestial objects. Measuring the polarization of X-rays traces the story of where this light came from, including the geometry and inner workings of its source.

<https://www.hindustantimes.com/india-news/after-its-successful-sun-moon-expeditions-isro-starts-work-on-dedicated-polarimetry-mission-101695062373702.html>

