

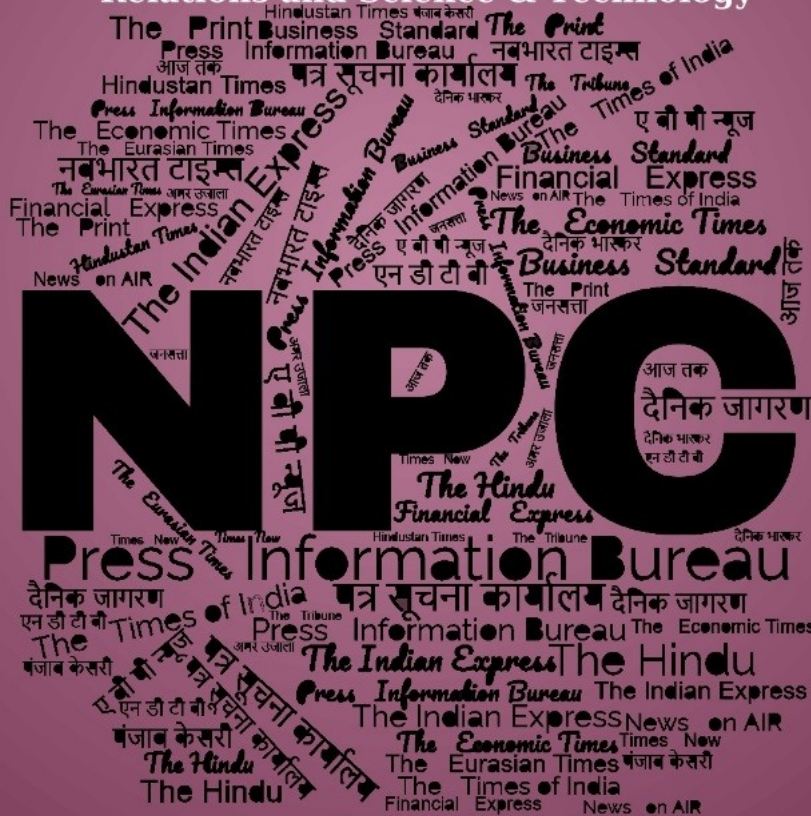
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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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Thu, 03 Oct 2024

DRDO rejig hits internal huddle: What's delaying this key Modi govt reform

The government's plan to revamp the Defence Research and Development Organisation (DRDO) had run into hiccups despite being a key element of the Narendra Modi government's 100-day agenda in its third term.

A Prime Minister's Office (PMO)-driven nine-member committee, led by former principal scientific advisor Prof. K. VijayRaghavan, had submitted its report, 'Redefining Defence Research and Development', in January. However, its implementation has hit roadblocks. Resistance from senior DRDO officials has delayed the recommended structural changes.

To expedite the restructuring, the DRDO headquarters had, in May, established an Overseeing Committee, chaired by Dr Samir Kamat, the organisation's chairman and secretary, Department of Defence Research and Development. Thirteen specialised committees, led by DRDO director generals, were also formed to ensure timely implementation of the VijayRaghavan panel's recommendations. August 31 was set as the deadline for completing the reforms or at least establishing clear milestones wherever full implementation was not feasible.

Despite these efforts, resistance within the DRDO persists, complicating the implementation of reforms. In a key development, Kamat received a one-year extension beyond his scheduled retirement on May 31, pointing to his critical role in overseeing implementation of the proposed changes. However, the ongoing pushback from within the DRDO raises questions about whether the long-anticipated reforms will move forward on time.

According to a key defence official, while multiple rounds of meetings have happened within the DRDO, no major reforms or changes have been seen on the ground. In fact, a section in the DRDO headquarters believed implementation of the reforms was 'in abeyance'.

Some officials, however, say that a bit of work has happened in the field of maximum industry and academia participation in defence technology and mechanisms to assist industries.

Last week, the DRDO's Mysore-based Defence Food Research Laboratory (DFRL) was merged with its Gwalior-based Defence Research Development Establishment (DRDE). But interestingly, the DFRL will remain a self-accounting unit under the administrative control of DRDE and the DFRL director will be called centre head and will report to the DRDE. The DFRL's role is to provide logistical support and meet the food challenges of the Indian armed forces while the DRDE conducts defence research and development against hazardous chemical and biological agents.

The VijayRaghavan panel has stated that nearly 60 per cent of the delays in DRDO projects are caused by internal issues, such as the absence of required technologies, and another 18-odd per

cent is due to armed forces' proclivity for changing goalposts and specifications constantly. Bureaucratic red tape, too, chokes projects.

The DRDO, which has an outlay of Rs 23,264 crore in the 2023-24 budget estimate, has often been criticised for delayed projects and cost overruns. Reforming the DRDO is central to the government's plans to boost defence manufacturing, through initiatives such as Aatmanirbhar Bharat, and reduce India's over-reliance on imports. It is also intended to give a fillip to defence exports, for which an ambitious target of Rs 35,000 crore by 2025 has been set.

<https://www.indiatoday.in/india-today-insight/story/drdo-rejig-hits-internal-huddle-whats-delaying-this-key-narendra-modi-govt-reform-2610664-2024-10-03>



Thu, 03 Oct 2024

आसमान से करेंगी बॉर्डर की हिफाजत, वायुसेना और DRDO कर रही ऐसा एयरक्राफ्ट तैयार

रक्षा मंत्रालय ने भारतीय वायु सेना के लिए छह एयरबोर्न अर्ली वार्निंग एंड कंट्रोल सिस्टम (AEW&C) जिसे "नेत्रा" भी कहा जाता है उसकी खरीद के लिए आरएफआई REQUEST FOR INFORMATION जारी किया है. भारतीय वायुसेना और डीआरडीओ मिलकर नेत्र विमान के छह मार्क-1 ए के साथ-साथ छह मार्क-2 के संस्करण को डेवलप करने का काम कर रही है. इनमें से तीन नेत्र विमान पहले ही बनाए गए थे.

AEW&C का मुख्य मकसद लंबी दूरी की रडार को डिटेक्ट करना है, जिसमें रडार, इलेक्ट्रॉनिक सर्विलांस सिस्टम, कम्युनिकेशन सिस्टम, कमांड एंड कंट्रोल, युद्ध प्रबंधन प्रणाली और डेटा लिंक के माध्यम से नेटवर्किंग शामिल है.

वायुसेना और DRDO कर रहा तैयार

भारतीय वायुसेना को एक ऐसे विमान की जरूरत है जिसमें जेट- इंजन हो, 40,000 फीट और उससे अधिक की ऊंचाई पर निगरानी रख सके, लेटेस्ट नेविगेशन सिस्टम और मैक 0.7 से अधिक कूज स्पीड के साथ कम से कम आठ घंटे तक उड़ान भर सके. साथ ही वायुसेना की जरूरत के मुबिक नए नेत्रा विमान के रडार सिस्टम में 360-डिग्री कवरेज होनी चाहिए. वायुसेना और डीआरडीओ मिलकर नेत्रा को तैयार कर रहे हैं.

वायुसेना का नेत्रा विमान एक एयरबॉर्न अर्ली वार्निंग एंड कंट्रोल (AEW&C) विमान है. इसे आसमान में भारत की आंख कहा जाता है. नेत्रा विमान के बारे में कुछ खास बातें:

1. यह विमान, आसमान में मौजूद दुश्मनों के विमानों और दूसरी उड़ने वाली चीजों का पता लगाता है.
2. यह जानकारी इकट्ठा करके अपने साथ उड़ रहे लड़ाकू विमानों को इनफार्मेशन देता है, जिससे व संभावित खतरे से निपट सकें.
3. यह विमान, मिसाइल, जहाज और वाहनों को ट्रैक कर सकता है और ढूँढ सकता है.
4. यह विमान, सीधे कमांड दे सकता है
5. भारतीय वायुसेना के पास पहले से ही दो नेत्रा विमान हैं. अब इनके अलावा छह और नेत्रा विमान बनाने की योजना है.
6. इसमें स्वदेशी रूप से विकसित एक्टिव इलेक्ट्रॉनिकली स्कैन्ड ऐरे (AESAs) रडार सिस्टम है.
7. इसमें कम्युनिकेशन सपोर्ट मेजर सिस्टम और रिकॉर्ड इंटरसेप्शन कम्युनिकेशन है.
8. इसमें विमान के अंदर सेल्फ प्रोटेक्शन सुईट भी है.

9.यह विमान हवा में ही रीफ्यूल किया जा सकता है

10.यह एक ऐसा विमान है जो आसमान में रह कर दुश्मन की हर चाल, हर हलचल पर निगाह रखता है

11.सेना को दुश्मन की सीमा पर किसी भी गलत हरकत की जानकारी देता है.

12.नेत्रा हल्के वजन का एयरक्राफ्ट जो निगरानी के लिए डिजाइन किया गया है.

<https://www.tv9hindi.com/india/defence-ministry-rfi-6-airborne-airborne-early-warning-and-control-systems-aircraft-purpose-benefits-2858856.html>



Thu, 03 Oct 2024

MAGIC's national-level contest on October 5; DRDO chairman Dr Samir Kamat for inauguration of Defense Innovation Challenge for Excellence 2024; Startups addressing challenges in the Indian defense sector to participate

The Marathwada Accelerator for Growth and Incubation Council (MAGIC) has announced the sixth edition of its flagship annual Innovation Challenge, aimed at encouraging new entrepreneurs to transform their innovative ideas into commercially viable ventures.

This year's competition, "Defence Innovation Challenge for Excellence 2024," will incentivize innovative students, innovators, and startups capable of providing solutions to problems in the Indian defence sector while contributing to job creation and intellectual property for the nation, said Prasad Kokil, Director of MAGIC.

The inauguration ceremony will take place on October 5 in the presence of secretary of the Defense Research and Development Department (DDR&D) and chairman of DRDO Dr Samir Kamat. Vice-president of CII Western Region and managing director of Bagla Group Rishi Bagla, partner 3D Engineering LLP Ajay Deshkar, and CMIA president Arpit Save will also remain present.

The competition will feature separate evaluations and awards for startups at the idea, prototype, and revenue stages. The total prize value is approximately ₹6.5 lakh, alongside incubation support provided by MAGIC.

3D Engineering, the Maharashtra State Innovation Society, iDEX, Startup India, and the principal scientific adviser's office of the Government of India are backing the initiative. This all-India competition has no restrictions on educational background and is open to newcomers from all age groups and sectors.

<https://www.lokmatimes.com/aurangabad/magics-national-level-contest-on-october-5-drdo-chairman-dr-samir-kamat-for-inauguration-of-defense-innovation-challenge-for-excellence-2024-startups-addressing-challenges-in-the-indian-defense-sector-to-participate/>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Thu, 03 Oct 2024

Launch of 25T Bollard Pull Tug, Ashva (Yard 337)

Third 25T Bollard Pull (BP) Tug, Ashva (Yard 337) was launched by Cmde Ajay Yadav, NOIC (WB) on 03 Oct 24 at M/s Titagarh Rail Systems Limited Kolkata. This Tug is a proud flag bearer of “Make in India” initiative of Govt of India.

Contract for construction and delivery of six 25T BP Tug was concluded with M/s Titagarh Rail Systems Limited (TRSL) in consonance with “Atmanirbhar Bharat” initiative of the Government of India. This Tug is built under the classification rules of Indian Register of Shipping (IRS). The availability of Tugs will provide impetus to Operational commitments of IN by facilitating assistance to Naval ships and submarines during berthing and un-berthing, turning and manoeuvring in confined waters. The Tugs will also provide afloat firefighting assistance to ships alongside, and at anchorage, and will also have capability to conduct limited Search and Rescue Operations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2061609>

THE ECONOMIC TIMES

Thu, 03 Oct 2024

IIT Delhi, IAF join hands for AI-powered research on aviation textile

IIT Delhi and Headquarters Maintenance (HQ) Command, Indian Air Force, Nagpur, have signed an MoU to collaborate on advancing innovative technologies for aviation textiles focusing on parachutes and other safety equipment.

The Indian Institute of Technology (IIT) and HQ Maintenance will cooperate, collaborate and promote research and development in areas of obsolescence management, self-reliance, upgradations and digitisation through indigenisation in the field of aviationgrade textiles.

According to Group Captain Prashant Pathak, Commanding Officer 16 BRD, AF, some of the areas of interest for collaboration include raw material selection for various parachutes and safety equipment.

"Development of modern technologies and equipment for technical textile or fabric testing and latest standards available for incorporation into product designs related to parachute and safety equipment, implementing AI and Robotics or imaging technologies for quality acceptance checks of textile, fabric raw material or finished products are also among the areas of collaboration," Pathak said.

"Innovating Machine Learning-based Imaging Technology of finished products such as pilot parachute, brake parachute or cargo parachute canopies, associated harness and crew restraint systems, etc. received from the field units for repair, design and development, reliability studies, simulation studies, life extension studies of parachutes and associated accessories will also be part of the collaboration," he added.

Rajendra Singh, Associate Dean, IIT Delhi, emphasised the importance of this partnership in addressing the Indian defence sector's growing demand for indigenisation.

"There is potential to leverage IIT Delhi's advanced research and IAF's practical expertise to develop innovative solutions for a wide range of aviation-grade textile products," he said.

<https://economictimes.indiatimes.com/news/defence/iit-delhi-iaf-join-hands-for-ai-powered-research-on-aviation-textile/articleshow/113907075.cms>

THE ECONOMIC TIMES

Thu, 03 Oct 2024

Bharat Forge partners with US defence giants to manufacture next-gen Howitzers

Bharat Forge has announced that its subsidiary, Kalyani Strategic Systems, will sign an agreement with US-based defence companies AM General and Mandus Group. The collaboration focuses on the development and production of advanced artillery gun platforms designed to meet the evolving needs of modern armies.

The companies aim to create compact, robust, lightweight, ruggedized, and mobile artillery systems capable of operating in all weather conditions and terrains.

In an exchange filing, Bharat Forge stated, "As the battlefield changes with near peer adversaries, there is increasing demand for modern light artillery systems with enhanced firepower, precision strike, tactical mobility, and command & control capabilities."

This initiative includes the development of 105mm and 155mm next-generation artillery platforms featuring disruptive technology that enhances responsiveness, survivability, and transportability.

Baba Kalyani, Chairman and Managing Director of Bharat Forge, expressed the significance of this partnership, stating, "This strategic collaboration aims to co-develop and co-produce the most versatile and innovative weapon systems."

The platforms will also optimize crew size due to reduced logistics requirements, delivering firepower and mobility while remaining lightweight and modular.

John Chadbourne, AM General EVP for Business Development, highlighted the collaboration's importance, saying, "AM General and Mandus Group are looking forward to exploring this collaboration with Kalyani and Bharat Forge to ultimately deliver advanced mobile artillery capabilities."

He added, "A partnership like this is a testament to our company's commitment to be responsive and dynamic as the battlefield evolves."

In a broader context, India's defence production sector has achieved notable milestones. defence Minister Rajnath Singh announced that defence production has reached an all-time high of ₹1.27 lakh crore in value for the 2023-24 fiscal year.

He also emphasized that India is now exporting weapons and military hardware to over 90 friendly countries. Singh highlighted the use of domestically manufactured platforms by Indian armed forces, showcasing the nation's growth on the global defence industrial stage.

Furthermore, India's defence exports surpassed ₹21,000 crore for the first time in 2023-24, with a government target to raise this figure to ₹50,000 crore over the next five years. The Indian armed forces are projected to spend around \$130 billion on capital procurement by 2029, driven by the government's efforts to decrease dependence on imported military platforms and bolster domestic manufacturing capabilities.

To facilitate this growth, the Indian government has set a goal of achieving a turnover of \$25 billion (₹1.75 lakh crore) in defence manufacturing within five years. In May 2020, the government increased the Foreign Direct Investment (FDI) limit in the defence sector from 49% to 74% under the automatic route, allowing 100% FDI in specific cases.

In the stock market, shares of Bharat Forge Ltd. are trading 1.06% lower at ₹1,514, although the stock has increased over 20% this year, reflecting investor confidence in the company's strategic initiatives and the growing demand for advanced defence systems.

<https://economictimes.indiatimes.com/news/defence/bharat-forge-partners-with-us-defence-giants-to-manufacture-next-gen-howitzers/articleshow/113903296.cms>



Thu, 03 Oct 2024

Army will soon be able to crack encrypted handsets used by terrorists in J-K: Lt Gen Rajiv Ghai

Top Army officer in Kashmir valley Lt Gen Rajiv Ghai on Thursday said the Army would soon be "able to crack" encrypted handsets used by terrorists in Jammu and Kashmir.

Talking to reporters here, Lt Gen Ghai acknowledged that the 'Ultra' communication was giving secrecy to terror groups but he assured that the work is in progress.

"Ultra communication has various layers of encryption and while presently, it is affording them the secrecy that they want.

"But I assure you that work is happening in that regard and soon we will be able to crack that encryption and I am hoping that will further dent the terrorist ecosystem network," Lt Gen Ghai

said in his last press conference as commander of valley-based XV Corps. He will soon take over as Director General of Military Operations.

To a question about weaponisation of mobile phones used in Israel-Lebanon conflict, he said, “Every time a new method is employed by any military force across the world, we always take note of it to draw our own lessons, so we can incorporate what is relevant to us and prepare our army and armed forces accordingly.” “What we are seeing unfold in the Middle East is obviously a new trend, and the manner in which it is unfolding is quite unique. Therefore, we will certainly analyze it, put it into perspective, and come to conclusions about what is relevant and how it could affect us,” he added.

The Ultra sets were recovered from some of the encounters in the Kashmir valley.

These specialised handsets, exclusively customised by Chinese companies for the Pakistan army, were seized after a gunfight in the intervening night of July 17-18 last year in the Sindarah top area of Surankote in Jammu region’s Poonch district and on April 26 this year after an encounter at the Check Mohalla Nowpora area of Sopore in north Kashmir’s Baramulla district.

The ‘Ultra’ handsets, which have also been found in the south of the Pir Panjal region, combine cell-phone capabilities with specialised radio equipment that does not rely on traditional mobile technologies like Global System for Mobile or Code-Division Multiple Access (CDMA).

The device operates on radio waves for message transmission and reception, with each ‘Ultra’ set linked to a control station located across the border, officials said and added that the two ‘Ultra’ sets cannot reach out to each other.

They said Chinese satellites are used to carry these messages that are compressed to bytes from the handset to the master server in Pakistan for its onward transmission.

This is yet another help being extended by China to its key ally Pakistan, the officials said.

<https://indianexpress.com/article/india/army-crack-encrypted-handsets-terrorists-jk-lt-gen-rajiv-ghai-9602401/>



Fri, 04 Oct 2024

‘China rapidly building infrastructure along LAC, India upgrading too’: IAF chief AP Singh

Air chief marshal Amar Preet Singh on Friday said China is rapidly building infrastructure along Line of Actual Control, especially in the Ladakh sector, while India is also upgrading its infrastructure along the border.

At a press conference ahead of the Air Force Day, AP Singh also spoke on the geopolitical tensions and conflicts in various geographies and said it is important to have indigenous weapons systems to deal with any future security challenges.

“The Indian Air Force should have entire inventory produced in India by 2047,” AP Singh said.

To a question, the Air chief marshal said three units of S-400 missile systems were delivered by Russia and it promised to deliver the remaining two units by next year.

An ace test pilot, AP Singh took over as the new chief of the Indian Air Force last month. He took from Air Chief Marshal VR Chaudhari who superannuated today after a three-year stint as chief.

Air Chief Marshal Singh was previously the Vice Chief of the Air Staff.

Born on October 27, 1964, ACM Singh was commissioned into the fighter pilot stream of the Indian Air Force in December 1984.

During his long and distinguished service spanning nearly 40 years, he has served in a variety of Command, Staff, Instructional and Foreign appointments.

An alumnus of the National Defence Academy, Defence Services Staff College and National Defence College, he is a Qualified Flying Instructor and an Experimental Test Pilot with more than 5,000 hours of flying experience on a variety of fixed and rotary wing aircraft.

<https://www.hindustantimes.com/india-news/china-rapidly-building-infrastructure-along-lac-india-upgrading-too-iaf-chief-ap-singh-101728026345917.html>

THE ECONOMIC TIMES

Fri, 04 Oct 2024

Indian Army to hold 62nd Walong Day, pay homage to soldiers of 1962 Sino-Indian War

The Indian Army is all set to commemorate the 62nd Walong Day with a series of grand events, paying homage to the indomitable courage and sacrifice of the soldiers who fought valiantly during the Battle of Walong in the 1962 Sino-Indian War.

The celebrations are set to begin on October 17, 2024 with a solemn opening ceremony and wreath-laying at the Walong War Memorial, the place of remembrance of the brave hearts who laid down their lives defending our motherland.

The 62nd Walong Day will not just be a tribute to the past but a vibrant celebration of gallant spirit of the Indian Army.

The meticulously planned month-long celebration includes battlefield treks, car rally, medical and veterinary camps, adventure treks, cycle and motorcycle expedition, and the Half Marathon finishing at Walong.

Each event symbolizes the indomitable spirit of the Indian Army and its dedication to keep the memory of the fallen heroes alive.

The Indian Army's involvement in the Battle of Walong stands as a testament to the sheer bravery, dedication and unwavering spirit of its soldiers.

Facing severe logistical challenges in the harsh terrains of Arunachal Pradesh, the soldiers of the 6 KUMAON, 4 SIKH, 2/8 Gorkha Rifles, 3/3 Gorkha Rifles, and 4 DOGRA fought with unparalleled gallantry, making the enemy pay dearly for every inch of ground.

Their courage, even in the face of overwhelming odds, remains etched in the annals of Indian military history.

The upcoming events reflect the Army's commitment to not only remember the sacrifices of the past but also to engage with the local community, fostering a spirit of unity, resilience, and patriotism.

As the celebrations unfold, the Indian Army invites everyone to gear up and join them with renewed 'josh' to celebrate their hard work, to honour the legacy of those who made the supreme sacrifice, and commemorate their contributions towards the nation.

The 62nd Walong Day promises to be a heartfelt tribute to the heroes of Walong, ensuring that their stories of bravery continue to inspire the nation.

<https://economictimes.indiatimes.com/news/defence/indian-army-to-begin-62nd-walong-day-pay-homage-to-soldiers-of-1962-sino-indian-war/articleshow/113932856.cms?from=mdr>



Thu, 03 Oct 2024

Aero India to be held in Bengaluru from February 10

The Defence Ministry on Thursday (October 3, 2024) announced dates for the next edition of Aero India held biennially in Bengaluru. Aero India 2025 is scheduled to be held from February 10 to 14. Aero India and DefExpo are two major exhibitions that attracts global and Indian Defence manufacturers and several official delegations and held alternate years. While Aero India has always been held in Bengaluru, over the years DefExpo has moved to several locations.

DefExpo, which was scheduled to be held this year, did not happen. In 2022 as well, DefExpo got delayed and was eventually held in September in Gandhinagar.

<https://www.thehindu.com/news/national/aero-india-to-be-held-in-bengaluru-from-february-10/article68714358.ece>



Thu, 03 Oct 2024

India's Air Defence Strengthens with Akashteer Systems for the Army

Amid heightened global security concerns, the Indian Army has significantly enhanced its air defence capabilities with the acquisition of 100 Akashteer air defence systems. Developed by Bharat Electronics Limited (BEL), these advanced Air Defence Control and Reporting Systems (ADCRS) will serve as a critical asset in safeguarding the country from aerial threats, including missile and rocket attacks. The successful delivery of these systems underscores India's commitment to bolstering its military's self-reliance and modernizing its defence infrastructure.

A New Milestone in Indigenous Defence Manufacturing

The journey toward acquiring these 100 Akashteer systems began in March 2023, when the Ministry of Defence contracted BEL, a government undertaking, for their production. The contract,

worth nearly INR 2,000 crore, was part of India's broader push towards indigenization and enhancing the country's defence capabilities. In March 2024, BEL delivered the first Akashteer system to the Indian Army. By September 30, 2024, all 100 units had been successfully handed over, meeting the Army's critical operational timelines.

This rapid deployment reflects BEL's strategic ability to deliver crucial defence systems on time, in collaboration with the Indian Army's Army Air Defence (AAD) corps. The speed and efficiency of this delivery have reaffirmed BEL's position as a key player in India's defence manufacturing sector.

The Role of Akashteer in Air Defence

Akashteer is more than just an air defence system—it is a sophisticated, integrated control and reporting system designed to neutralize enemy threats swiftly. The system is capable of managing all aspects of air defence for the Army, integrating multiple radar systems, sensors, and communication technologies into a single operational framework.

The Akashteer system provides a real-time battlefield view, allowing military personnel to detect, track, and engage aerial threats such as incoming missiles or enemy aircraft. It brings together various surveillance assets, radar systems, and communication nodes, enabling precise coordination of air defence operations. This enhances the Indian Army's ability to monitor airspace and deliver timely responses to any imminent threats.

The system's versatility makes it suitable for a wide range of operational environments. Whether deployed along contested borders or in strategic urban areas, Akashteer strengthens the Army's capability to protect key assets and infrastructure from aerial attacks.

Importance in the Broader National Security Context

The integration of 100 Akashteer systems into the Indian Army's defence architecture is critical, especially in the context of evolving global threats. The recent missile attacks in regions like Israel highlight the importance of having robust air defence systems capable of responding to advanced and high-speed missile threats. In this regard, Akashteer offers India the ability to monitor and respond to such attacks in real-time, reducing the risk of damage to strategic assets and military installations.

Additionally, this acquisition comes at a time when regional security concerns, including tensions with neighbouring countries, have underscored the need for India to upgrade its defence systems. With the successful induction of Akashteer, the Indian Army has further fortified its defence against missile and rocket attacks, making it better equipped to handle potential conflicts or hostile incursions.

Boosting Self-Reliance through Indigenous Technology

The Akashteer program exemplifies India's commitment to self-reliance in defence manufacturing, aligning with the government's 'Make in India' initiative. By producing the systems domestically, India is not only reducing its dependency on foreign defence imports but also creating high-tech jobs and fostering innovation within the country.

Bharat Electronics Limited, the manufacturer of Akashteer, has been a leader in indigenous defence technologies. Its expertise in building complex, integrated systems has allowed India to develop advanced capabilities independently, keeping pace with global technological advancements in defence.

The Future of Indian Air Defence: Hypersonic Developments

Beyond Akashteer, India is also looking towards future advancements in missile technology. Lieutenant General Adosh Kumar, the Director General of Artillery in the Indian Army, recently revealed that the country is actively developing hypersonic missiles. These missiles, still in the research and development phase, are expected to significantly bolster India's artillery and missile capabilities once operational.

Hypersonic missiles, which travel at speeds exceeding five times the speed of sound (Mach 5), are known for their speed and evasive abilities, making them difficult to intercept. As global superpowers like the United States, Russia, and China advance their hypersonic missile programs, India is positioning itself to be a part of this exclusive group. The development of indigenous hypersonic missiles represents the next frontier in India's defence capabilities, alongside the already formidable BrahMos missile system, which currently forms the backbone of the Army's long-range strike capability.

<https://www.financialexpress.com/business/defence-indias-air-defence-strengthens-with-akashteer-systems-for-the-army-3629848/>



Fri, 04 Oct 2024

Indian Army hosts 'Drone Shivir' to boost India's indigenous defence ecosystem

The Indian Army, in collaboration with the Drone Federation of India (DFI), organised the 'Drone Shivir' event at the Dr. Ambedkar International Centre in New Delhi. The event marked a significant step towards enhancing India's autonomy in defence drone technology.

Under the banner of "Building an Ecosystem for Indigenous Defence UAVs", the conference convened key stakeholders from various sectors, including defence, academia, government, and industry. The discussions focused on addressing the challenges and opportunities inherent in the development of UAVs for military applications, emphasising the imperative to reduce reliance on foreign technology and establish a robust, self-reliant drone ecosystem as part of the Atmanirbhar Bharat mission.

The event commenced with an inaugural address by Smit Shah, President of the Drone Federation of India (DFI), followed by a keynote speech from Lieutenant General NS Raja Subramani, Vice Chief of the Army Staff. In his address, the VCOAS highlighted the strategic necessity for a secure and indigenously developed UAV system, stressing its critical role in enhancing national defence.

The agenda included a series of technical presentations and discussions addressing crucial issues such as supply chain vulnerabilities, cybersecurity threats, and regulatory gaps.

Attendees also had the opportunity to view a showcase of indigenous UAV components, along with exhibitions promoting industry and research collaboration. By fostering collaboration among various stakeholders, 'Drone Shivir' has established a foundation for a resilient and fully indigenised UAV ecosystem, aimed at bolstering India's defence capabilities while diminishing dependence on imported technologies.

<https://www.indiatoday.in/amp/india/story/indian-army-hosts-drone-shivir-to-boost-indias-indigenous-defence-ecosystem-2610897-2024-10-04>

Thu, 03 Oct 2024

Zen Technologies Signs Rs 46 Crore Maintenance Deal with Ministry of Defence

Zen Technologies Limited has secured a substantial Annual Maintenance Contract (AMC) with the Ministry of Defence, valued at Rs46 crore, inclusive of taxes. The five-year contract covers the upkeep and maintenance of simulators designed by Zen, further solidifying its pivotal role in the country's defence infrastructure.

The AMC underscores Zen's growing relationship with the Ministry of Defence, highlighting the Ministry's trust in Zen's cutting-edge simulation technology. This contract will see Zen ensuring the continuous readiness and operational efficiency of vital training simulators used by India's defence forces.

Reflecting on the new deal, Zen Technologies expressed its commitment to maintaining the high standards that have become synonymous with its brand. "We are proud to be a reliable partner for the Ministry of Defence, and this contract demonstrates the faith the government places in our capabilities," a spokesperson from the company commented.

Pioneering Simulation Solutions

Zen Technologies has built a reputation as a leading developer of advanced military training simulators, anti-drone solutions, and other defence technologies. With over 30 years of experience, the company has positioned itself at the forefront of military training innovation, helping armed forces improve their skills and preparedness through high-tech simulation environments.

The company operates a dedicated Research and Development (R&D) facility in Hyderabad, recognized by the Government of India's Ministry of Science and Technology. This focus on innovation is evident in Zen's impressive track record, having filed over 155 patents, with more than 75 already granted. Zen's extensive experience in the defence sector is also highlighted by its global reach, with over 1,000 training systems deployed internationally.

Supporting India's Defence Vision

This latest maintenance contract aligns with the Indian government's push for modernization and self-reliance in the defence sector. Zen's role in maintaining high-performance simulators complements the Ministry of Defence's broader strategy to ensure that India's military is equipped with world-class technologies and support systems. The AMC is a testament to the Ministry's confidence in Zen's ability to deliver consistent, high-quality service over the next five years.

By ensuring the seamless operation of these simulators, Zen is helping to bolster India's military preparedness and operational readiness. The company's continued innovation in defence solutions and its commitment to excellence will likely see further collaboration with the Ministry of Defence in the future.

<https://www.financialexpress.com/business/defence-zen-technologies-signs-rs-46-crore-maintenance-deal-with-ministry-of-defence-3629234/>

U.S. Navy Counters China's 5th-Gen Naval Fighter With Sixth-Gen Aircraft; Could Enter Service By Mid 2030s

The United States Navy is intensifying its efforts to develop and deploy a sixth-generation fighter jet by the early 2030s. This move comes as China tests its fifth-generation carrier-based fighter jet, which is anticipated to be operational shortly. Despite China's progress, the development suggests that its naval forces may remain a generation behind the U.S. Navy in cutting-edge fighter technology. The Chief of US Naval Operations, Admiral Lisa Franchetti, emphasized the importance of the upcoming aircraft, provisionally named the F/A-XX, during an address on October 2.

"We expect that sixth-generation platform to be able to have advanced sensors, advanced lethality, advanced range, and being able to integrate with manned and unmanned capabilities together," said Franchetti, noting the Navy's focus on combining these innovations with lessons learned from the Air Force's Next Generation Air Dominance (NGAD) program. The Navy plans to award a contract soon, with Boeing, Lockheed Martin, and Northrop Grumman competing to develop the next-generation fighter.

"We are in the source selection process right now," Franchetti confirmed during a Defense Writers Group event, underlining the strategic importance of air platforms and submarines as the Navy's key advantages. The F/A-XX is expected to replace the aging F/A-18 Super Hornet multi-role fighters and the E/A-18 Growler electronic warfare aircraft. It will deliver enhanced range, advanced sensing, and electronic warfare capabilities, surpassing the Navy's current fleet of F-35C fifth-generation fighters. The new platform is scheduled to enter service by the mid-2030s.

A key feature of the F/A-XX program is its integration into a "family of systems," similar to the Air Force's NGAD initiative. This family of systems will include Collaborative Combat Aircraft (CCAs), highly autonomous drones designed to operate as loyal wingmen alongside the manned fighter jets. These drones will be powered by artificial intelligence and enhance the fighter's capabilities in contested environments, particularly in anti-access/area denial scenarios. The US Navy's pursuit of the sixth-generation fighter jet underscores its determination to retain air dominance in the face of growing global competition.

Sixth-Generation Jets To Maintain Edge Over China

While China continues to modernize its naval aviation capabilities, this next-generation platform will position the US Navy to stay ahead in the evolving landscape of military technology. The U.S. Navy's focus on developing a sixth-generation fighter jet by the early 2030s represents a critical step in maintaining its superiority, particularly as China persistently upgrades its naval aviation capabilities.

Although the People's Liberation Army Navy (PLAN) has advanced in testing its FC-31 (the J-35 carrier-based variant), the United States still leads in naval aviation capabilities. The US Navy's carrier-based fighter jets are already a force to reckon with. The F-35C — which entered service in 2019 — is the Navy's most advanced carrier-based fighter jet. It remains the world's first and only long-range stealth strike fighter aircraft explicitly designed for aircraft carrier operations.

In addition to the F-35C, the US Navy operates variants of the F/A-18 Super Hornet, which serves as the backbone of the carrier strike force. These aircraft provide flexibility in strike missions, air superiority, and electronic warfare, ensuring that the US Navy retains dominance in the skies over global waters.

In stark contrast, China's naval aviation capabilities are still catching up. The only carrier-based fighter jet with the PLAN is the J-15, a fourth-generation aircraft that entered service over a decade ago. While the J-15 has seen significant use, its weight, fuel load, and mission range restrict its effectiveness compared to its American counterparts.

However, China has recently begun testing a naval variant of the advanced J-35 fighter jet, a fifth-generation aircraft that promises enhanced radar capabilities and reduced radar signature. The jet was initially intended for use with the Type 003 Fujian carrier, and its appearance on the Liaoning, which uses a ski-jump ramp for aircraft launches, indicates that the J-35 could also be operated from China's older carriers.

The J-35's deployment into service is not expected until the early 2030s, indicating that China's fifth-generation fighter capabilities will be constrained in the short term. By the time China deploys the J-35 in meaningful numbers, the U.S. Navy will likely be on the verge of introducing its sixth-generation fighter jet, known for now as the F/A-XX.

The generational gap between the U.S. and Chinese fighter jets will have profound implications for naval power dynamics, particularly in the Indo-Pacific region, where both nations are vying for influence. The deployment of a sixth-generation US Navy fighter would provide the United States a decisive advantage in key strategic areas such as the South China Sea and the Taiwan Strait, regions where China has steadily increased its military presence.

The US Navy's anticipated technological leap could allow it to outmaneuver China's fifth-generation fighters, ensuring air superiority in a possible conflict. Furthermore, the sixth-generation fighter is not merely a response to China's advancements but part of a broader strategy to future-proof the US military in an era of rapid technological change.

The United States intends to develop an air force equipped to tackle future threats by incorporating AI, drones, and advanced weapon systems. The ability to operate in highly contested environments, such as anti-access/area denial zones, will be critical for maintaining US naval dominance in an increasingly multipolar world.

US Navy's F/A-XX Program Amidst Air Force's NGAD Reevaluation

The US Navy's commitment to the F/A-XX program arrives at a critical juncture as the Air Force reviews its future combat aircraft strategy: the Next Generation Air Dominance (NGAD) jet. This reevaluation, which is expected to take place over the next three months, aims to address the Air Force's future capabilities.

Air Force officials have indicated a preference for a more cost-effective solution for the NGAD. However, pursuing a cheaper option may necessitate compromises in essential areas such as range and payload capacity. For instance, a single-engine design could be favored over a more powerful twin-engine setup. Additionally, achieving shorter operational ranges would require the Air Force to develop and implement a stealthy Next-Generation Air-refueling System (NGAS), envisioned as a future tanker concept to support its operations.

Nevertheless, the Navy, too, is grappling with its budgetary challenges. Earlier this year, the Navy postponed approximately \$1 billion in investments for the F/A-XX to prioritize immediate readiness requirements, and there is a possibility that the US Congress may impose further cuts to the program's budget.

The budgetary limitations and specific financial constraints could delay the introduction of the sixth-generation fighter jet. Despite these hurdles, remarks from the Navy's top officials suggest that developing a new crewed fighter remains a high priority.

Nonetheless, some critics argue that the Navy does not necessarily require an entirely new and advanced aircraft; rather, they believe the focus should be on optimizing the capabilities of existing systems. In particular, there is a focus on optimizing the performance of the F-35C, in which the Navy has made substantial investments over the years, leading to considerable expenses for taxpayers.

<https://www.eurasiantimes.com/u-s-navy-counters-chinas-5th-gen-naval-fighter/>

Science & Technology News



Thu, 03 Oct 2024

Skyroot Aerospace qualifies Vikram-1 Reaction Control System

Skyroot Aerospace has successfully tested and qualified its Reaction Control System (RCS) for the Vikram-1 rocket. The RCS system can correct or adjust the trajectory of the launch vehicle during the flight.

Four Raman Engines were fired in pairs to check both positive and negative rolls. The RCS executed a total of 65 pulses during the test, with each pulse ranging in duration between 60 and 1,200 milliseconds. Validating the avionics and propulsion systems on the RCS module are a crucial step in getting the Vikram-1 ready for its first orbital flight.

Skyroot Aerospace is one of the slew of NewSpace startups being mentored and handheld by ISRO, and has been access to ISRO facilities to test and develop its fleet of private launch vehicles, built specifically to cater to the burgeoning demand for deploying nanosatellites, microsatellites and picosatellites.

Cofounder of Skyroot Aerospace, Pawan Chandana says, "Witnessing this moment alongside our incredible team, who've poured years into this milestone, has been nothing short of amazing. The thrill of the powerful pulses and the synchronized sound of each firing was exhilarating. Seeing this test executed flawlessly, especially on the first attempt, is a testament to our team's dedication and expertise."

Development of the Vikram-1

Skyroot Aerospace was the first private startup in India to launch its own rocket, with the Vikram-S lifting off from Sriharikota in November 2022. The first orbital flight of the Vikram-1 was

expected in early 2024, with the goal of establishing a regular launch cadence of a Vikram-1 flight every quarter. However, these plans have been delayed by at least a few months

<https://www.news9live.com/science/skyroot-aerospace-qualifies-vikram-1-reaction-control-system-2712383>

ThePrint

Thu, 03 Oct 2024

Circular trash economy in sight, how Hyderabad project reclaims metals, converts waste to energy

Looking out a glass window from the third floor of a factory, a man uses a joystick to manoeuvre a garbage-loaded claw outside the building. He moves the claw to a massive pit equivalent to three storeys of a building, capable of holding 200,000 kilos of non-decomposable waste.

Many such garbage pits, covered with black tarps, lie outside the factory in Hyderabad's Dundigal. Inside the factory are thousands of electronics products, tonnes of precious metals, large magnets and rotating drums, hundreds of meters of pipes to clean gases, and a giant incinerator.

The factory is part of a private collaborative effort towards a circular trash economy. As much material as possible is reclaimed for recycling and reuse. The hardier, industrial-grade plastic and precious metals in electronics waste are recovered. The rest is disposed of in processes that add as little waste as possible to the environment.

The launch of the initiative in Hyderabad was on 10 September. It followed a detailed report that the non-profit Marico Innovation Foundation had released about plastic innovators in collaboration with the Indian Institute of Science (IISc) and Praxis Global Alliance.

“Plastic has been the reason for the success of many of our products, such as Parachute hair oil,” explained Harsh Mariwala, chairperson of Marico, which has launched the project with Re Sustainability and Sharrp Ventures. “Innovations in plastic gave us market share growth. When I would explain that in talks I gave, people would ask me, ‘You benefitted so much from plastics, but what kind of harm have you done to the environment?’. I would never have an answer.”

The project aims to recycle 32,000 tonnes of plastic, produce 9,000 tonnes of material for reuse and reduce carbon dioxide emissions by 15,000 tonnes annually.

Waste segregation into solid & wet, energy generation

As many as 10,000 sanitation workers across the city are involved in trash collection and segregation. Besides trucks, the city has at least 4,500 container autos with specially fitted QR codes to carry trash. Nearly 500 of them usually reach each of the segregation-and-transfer facilities daily.

At the transfer stations, refuse with calorific value and organic produce is separated and stored away for energy generation. Every day, nearly 4,000 metric tonnes of waste is left after that. This waste is compacted into cylinders and sent to a different facility, where industrial-scale equipment is used for the final sorting in automated processes. Rotating drums called trommels spin the trash, sorting it by weight, while a ballistic separator takes the heavy, wet waste away from the lighter, dry waste.

Nearly twenty percent of this waste has no calorific value, with no reclamation possible. So, it ends up in the landfills. But the remaining constitute what ultimately provides energy, precious metals, reclaimed plastic and silica ash for sand enrichment.

The segregated trash is put into vehicles with specific QR codes. The wet waste goes for processing at the Dundigal Waste-To-Energy Plant for power and compressed biogas generation. It goes from a drying zone to a combustion zone to a burnout zone.

Every day, chemical processes at the plant convert thousands of tonnes of wet waste into energy, with the power corporation purchasing it directly. The compressed biogas generated from wet waste is used as an alternative fuel for cement production.

Incineration of non-decomposable waste

The gigantic garbage pit where the man was directing the claw contained solid waste material that had no energy value and would not decompose, say fabric.

Such material is incinerated in a giant furnace chamber fitted with cameras and viewing windows of reinforced glass. It converts the waste to fly ash and bottom ash, which can replace sand. To minimise carbon emissions, the gases released in all the processes are treated chemically in colourful, futuristic-looking pollution control system pipes, which are visible over the facade of the building. Engineers at the facility pointed out how the smoke (flue gas) rising from the tallest tower looked clear.

Mariwala said that more facilities and smaller laboratories under construction for the pilot will be ready in another six months. One of the questions that requires addressing is how to lower the cost of recycled plastic, which, due to the processing involved, is more expensive than virgin plastic, he added.

“By increasing the supply of high-quality recycled materials and creating sustainable waste management practices, we are setting a new standard for innovation and responsibility in the industry,” he said.

E-waste facility & landfill

The insides of the e-waste facility look like an industrial cathedral, with ceilings three to four storeys high.

There are various rooms labelled as refineries, refurbishment and maintenance bays, chemical rooms, data wiping rooms, and more. Some engineers hunch over black-coloured laptops, which have been discarded by industries across the country, opening and separating parts. Others in the inspection area have identified the laptops that can be salvaged entirely or partially, down to the chip level. These will be refurbished and are first wiped clean in the data wiping room.

Electronic products use metals such as gold, silver, copper, and palladium on circuit boards. In the first step towards recovering these metals, the large-sized components of the products are broken into smaller pieces, almost as if passed through a blender. Next, large magnets separate the metals from the plastic in these pieces at high temperatures. All the metals are melted to form a molten alloy, which, in turn, is cooled into bars. These are then chemically processed to separate the different metals.

Outside this e-waste facility is the landfill, where black tarps cover the discarded waste, which cannot be recovered or decomposed. The government land is leased out by ReSustainability, which uses reagents and other chemicals to make the refuse less polluting.

The trash is buried in specialised containers with protective layers to prevent methane emissions. They are also constantly monitored to curb leeching or leaking into the environment.

Next year, the facility plans to begin lithium ion processing for discarded batteries.

Harsh Mariwala told ThePrint, “I am looking forward to the successful prototype of this project over the next one to two years. When that works, I have no doubt that we’ll be able to attract other industries and scale this up to a national level.”

<https://theprint.in/science/circular-trash-economy-in-sight-how-hyderabad-project-reclaims-metals-converts-waste-to-energy/2295359/>

