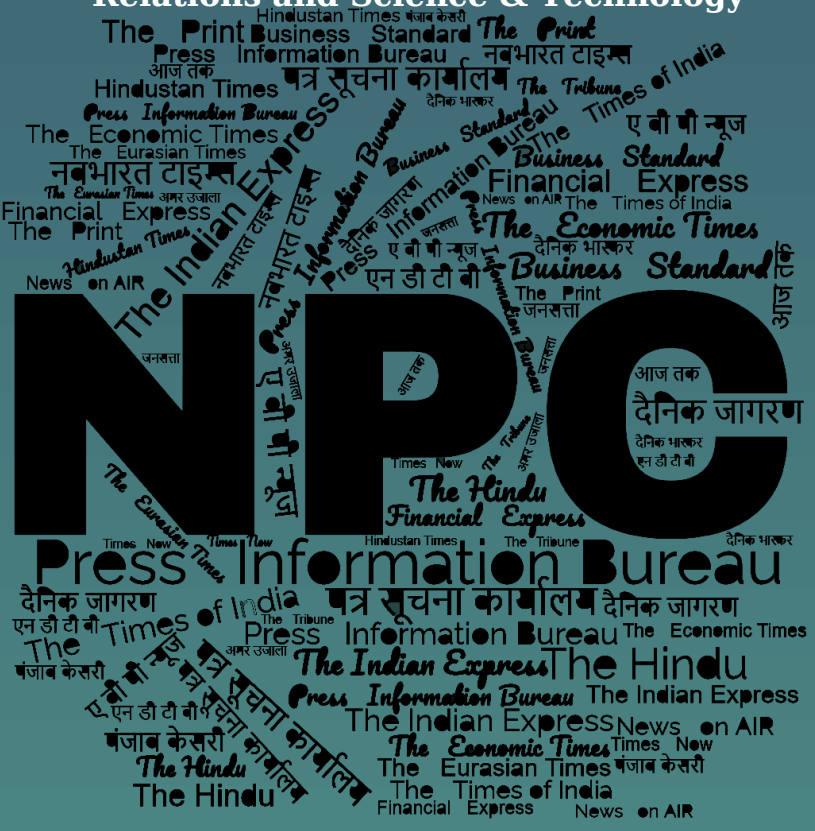
दिसंबर
Dec
2023

खंड/Vol. : 48 अंक/Issue : 231
09-11/12/2023

समाचार पत्रों से चयित अंश
Newspapers Clippings

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

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाउस, दिल्ली - 110 054
Metcalfe House, Delhi - 110 054

CONTENTS

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Sun, 10 Dec 2023

Chief of Defence Staff General Anil Chauhan's Visit to Japan

Chief of Defence Staff (CDS) General Anil Chauhan is slated to leave New Delhi on the night of 10 December for an official visit to Japan. The aim of this visit is to further reinforce the robust defence ties between the two nations. This visit underscores the growing importance of India – Japan Defence Cooperation.

During his visit, Gen Anil Chauhan is scheduled to interact with senior military leadership of Japan and will visit defence formations and establishments. The key highlights of the tour include call-on with the Minister of Defence, Mr Minoru Kihara, a meeting with Chief of Staff, Joint Staff, Japan Self-Defence Forces General Yoshida Yoshihide besides interactions with Commissioner of Acquisition Technology & Logistics Agency (ATLA) Mr Fukasawa Masaki, and also with Vice President of National Institute of Defence Studies (NIDS), Japan Major General Adachi Yoshiki.

In addition, the CDS will interact with the Faculty and Research Scholars at NIDS and also visit military establishments. The meetings and interactions will be aimed to foster mutual understanding, exchanging views on regional security, contribution towards strengthening bilateral defence cooperation as well as cooperation in the field of defence equipment and technology.

The CDS is scheduled to visit Japan Maritime Self-Defence Force (JMSDF) units and also undertake interactions with Commander in Chief Self Defence Fleet at Funakoshi JMSDF Base. General Anil Chauhan will also visit the Hiroshima Peace Park and lay wreath in remembrance of the victims of Hiroshima. He will pay special tributes at the Mahatma Gandhi statue at Hiroshima towards enhancing peace and tranquillity in the region.

India and Japan celebrate 71 years of diplomatic ties in 2023. This visit underscores the commitment of both nations to strengthen the special Strategic and Global Partnership. Demonstrating the enduring camaraderie that has flourished between India and Japan over the past 70 years, the visit will further boost bilateral cooperation on a host of strategic issues, particularly in defence collaboration.

https://pib.gov.in/PressReleasePage.aspx?PRID=1984784

Press Information Bureau
Government of India

Ministry of Defence

Sun, 10 Dec 2023

INS Sumedha Maiden Entry at Port Lamu, Kenya

As a part of on-going long-range deployment to Africa, Indian Naval Ship Sumedha arrived at Port Lamu, Kenya on 09 December 2023. The visit marks the maiden port call by any Indian Naval Ship at the recently developed Port in Kenya.

During the port call, personnel from both navies will engage in a wide range of professional interactions, deck visits and sporting exchanges, aimed at enhancing cooperation and exchanging best practices. A joint Yoga session, deck reception, medical camp and a Maritime Partnership Exercise have been planned as part of the visit.

INS Sumedha is the third of indigenously developed Saryu-class of Indian Navy. Commissioned on 07 March 2014, the ship is deployed for multiple roles independently and in support of fleet operations. The ship is equipped with an array of weapons and sensors and can carry multi-role helicopters. She is part of the Indian Navy's Eastern Fleet based at Visakhapatnam and functions under the operational command of the Flag Officer Commanding-in-Chief, Eastern Naval Command.

Indian Naval ships are regularly deployed overseas as part of Indian Navy's mission of building 'bridges of friendship' and strengthening international cooperation with friendly countries. The visit is in consonance with the Prime Minister's vision of Security And Growth for All in the Region (SAGAR) and seeks to further Indo-African ties.

https://pib.gov.in/PressReleasePage.aspx?PRID=1984670

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Dec 2023

Indian Army Conducts Table-Top Exercise (TTX) for Asean Women Peacekeepers

In a landmark initiative to promote gender inclusivity and enhancing the capabilities of women military personnel in peacekeeping operations, the Indian Army conducted a Table-Top Exercise (TTX) for the Women Officers of Association of South-East Asian Nations (ASEAN) at Manekshaw Centre in New Delhi from 4th to 8th December 2023.

The Exercise is part of ongoing efforts of Centre for United Nations Peacekeeping (CUNPK) to strengthen international cooperation and capacity-building in peacekeeping missions, with specific focus on empowering women in the field. CUNPK is a premier institution of the Indian Army to impart training in peacekeeping operations.

CUNPK had earlier conducted ASEAN Women Military Officers Course from 18th to 29th September 2023. This TTX is a follow up exercise of ongoing joint military training between India and ASEAN member states. The Exercise underscores India's shared commitment to the world peace, stability, and gender equality.

This Exercise served as a platform for participants to simulate and strategise responses to complex peacekeeping scenarios, reflecting real-world challenges. It also included exposure to complex operational peacekeeping environment and methods to ensure women peace and security.

The engagement also included a heritage tour of Delhi to showcase the rich & vibrant culture of India. The program also included lecture and demonstration on UN peacekeeping drills besides display of 'Made in India' equipment being deployed in various UN Missions.

https://pib.gov.in/PressReleasePage.aspx?PRID=1984046

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Dec 2023

Ministry of Defence Inks Contract worth Rs 588.68 Cr with Telecommunications Consultants India Limited for Digital Coast Guard Project

In alignment with the Government of India's strategic vision for Digital Armed Forces, the Ministry of Defence has signed a contract with Telecommunications Consultants India Limited (TCIL) on 8 December 2023, at a total cost of Rs 588.68 crore, for the acquisition of Digital Coast Guard (DCG) project, under the Buy (Indian) category.

A pivotal Initiative for the Indian Coast Guard (ICG), the DCG Project will unfold a comprehensive narrative of technological progression, encompassing the construction of an advanced Data Centre, the establishment of a robust Disaster Recovery Data Centre, amplification of connectivity across ICG sites, and the development of the ERP system. The project also leverages secured MPLS/VSAT connectivity, propelling itself to the forefront of cutting-edge defence technology.

At its core, the DCG project marks the establishment of a Tier-III standard Data Centre, armed with the latest technological capabilities. Functioning as the nerve centre, it enables centralized monitoring and management of applications deployed by the ICG, ensuring vigilant oversight of critical IT assets of the ICG.

The project is estimated to generate about one and a half lakh man-days over a span of five years, fostering active participation from diverse sectors of Indian industries, thus significantly contributing to the Government's efforts to achieve 'Atmanirbharta' in defence.

https://pib.gov.in/PressReleasePage.aspx?PRID=1983990

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Dec 2023

Non-Lapsable Fund for Defence Modernisation

Articles 112-114 & 266 of the Constitution provide that no money can be spent by the Government from Consolidated Fund of India without authorisation through an Annual Budget presented before the Parliament. Since authorisation under the Appropriation Act is meant for that particular financial year, the same does not allow operationalization of a Public Fund which is non-lapsable in nature. In this regard, separate mechanism is being worked out by Ministry of Finance in consultation with MoD, to explore a special dispensation to MoD to operationalize a Non-lapsable Defence Modernisation Fund.

Defence Expenditure is the largest expenditure amongst the Central Ministries. Defence expenditure as a definite percentage of total Government Expenditure/GDP cannot be ensured considering the fact that the resource allocations are made among various competing priorities on need basis. The budgetary allocations are optimally utilized and if required, additional funds are sought at Supplementary/RE stage to ensure that urgent & critical capabilities are acquired without any compromise to operational preparedness of Defence Services.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Dr Amar Singh in Lok Sabha today.

https://pib.gov.in/PressReleasePage.aspx?PRID=1983973

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Dec 2023

Technology Development Fund

The Technology Development Fund (TDF) scheme is a flagship programme of Ministry of Defence executed by DRDO under ‘Make in India’ initiative. The main objectives of the scheme are enumerated below:

To provide Grant in Aid to Indian industries, including MSMEs and Start-ups, as well as academic and scientific institutions for the development of Defence and dual use technologies that are currently not available with the Indian defence Industry.

To engage with the private industries especially MSMEs and Start-ups to bring in the culture of Design & Development of Military Technology and support them with Grant in Aid.

To focus on Research, Design & Development of Niche technologies which are being developed for the first time in the country.

To create a bridge amongst the Armed Forces, research organizations, academia and qualifying/certifying agencies with private sector entities.

To support the futuristic technologies having a Proof of Concept and converting them into prototype.

The benefits sought to be gained by the scheme are as follows:

Capacity and capability building of Indian industries for design and development of defence technologies in the country.

Creation of an ecosystem of R&D where industry and Academia work together to meet the current and futuristic requirement of Armed Forces and defence sector.

Building of Defence manufacturing ecosystem in country.

Achieving 'Aatmanirbharta' in defence technology.

Till date, a total of 70 projects at total cost of Rs 291.25 crore have been sanctioned to various industries and 16 defence technologies have been successfully developed/realised under the scheme.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Tapir Gao in Lok Sabha today.

https://pib.gov.in/PressReleasePage.aspx?PRID=1983971

The Tribune

Sun, 10 Dec 2023

Army Shortlists 22 Equipment for Surveillance, Information Collation

The Army has shortlisted 22 military equipment that will provide cutting-edge technology in warfare, surveillance and information collation. These will also be used for satellite imagery analysis, which will make it possible to automatically identify military infrastructure.

The items have been designed and produced in-house under the Army Design Bureau. Army Chief Gen Manoj Pande reviewed the 22 equipment that were put on display at an event on December 5.

The artificial intelligence-based satellite imagery analysis software has been named military objects detection system. It allows automatic detection and classification of military objects in satellite imagery in real time, said sources. Using this, commanders at all levels can take timely decision by having real-time situational awareness. Another use of AI has been made for developing information collation and analysis software. This cuts down on labour-intensive and time-consuming manual approach for gathering and analysing intelligence data and enemy activities.

The software automates data extraction, enabling real time analysis by quickly extracting critical insights from raw inputs to enhance situational awareness and decision-making ability. The software compiles and condenses incoming enemy activity data, presenting it in format that allows rapid reaction. It offers dynamic graphical representation, generating informative graphs that unveil concealed trends. It can be used with geographic information system software employed by the military to facilitate data mapping and enabling generation of heatmaps and simultaneous visualisation of multiple activities.

https://www.tribuneindia.com/news/india/army-shortlists-22-equipment-for-surveillance-information-collation-570402

THE TIMES OF INDIA

Sun, 10 Dec 2023

First LCA Mark1A Fighter Aircraft Squadron to be Deployed at Nal Air Base

The Indian Air Force is planning to raise the first squadron of the indigenous LCA Mark1A fighter aircraft squadron at the Nal air base in Bikaner district of Rajasthan near the Pakistan front.

The aircraft, which would be much more advanced than the existing LCA Mark1 Tejas fighters, are being equipped with the latest indigenous radars and avionics.

"The first squadron of the LCA Mark1A fighters is planned to be based out of the Nal air base in Rajasthan and would be inducted in one of the two MiG-21 Bison squadrons deployed presently there," defence sources told ANI

The first LCA Mark1A aircraft is expected to be delivered to the Indian Air Force by February-March timeframe by the Hindustan Aeronautics Limited, they said.

The LCA Mark1A fighter jets are now planned to be produced in large numbers as 83 aircraft are already under production and 97 more have been cleared by the central government.

Along with the 40 LCA Mark-1 Tejas fighters, a total of 220 LCA Mark 1 and LCA Mark1A aircraft are planned to be inducted into service in the next 8-10 years.

Hindustan Aeronautics Limited has also increased the rate of production of fighter aircraft and is expected to reach the 24 aircraft per year mark by 2025.

The IAF is going to replace the MiG series aircraft that have been in its inventory with the LCA variants.

The LCA Mark1A aircraft would be the replacements for its MiG-21s, MiG-23s and the MiG-27s. While the MIG-23 and MiG-27 have already been phased out by the force, two squadrons of the vintage MiG-21 are still in service and will be phased out soon.

The Indian Air Force is expected to use indigenous fighters to replace the Mirage-2000 and Jaguar aircraft in future.

As per the plans, defence sources said that the 10 squadrons of the LCA Mark 1 and Mark 1A, 12-13 squadrons of the LCA Mark-2 and the Advanced Medium Combat Aircraft with the 13 squadrons of the Russian origin Su-30MKI will make up for the bulk of the Indian Air Force by the end of next decade.

The Indian Air Force is also clear about one thing it will now have only 'Made in India' fighter aircraft and would require around 120 Multirole Fighter Aircraft (MRFA) indigenously similar to the capability provided by the two squadrons of Rafale fighters to have the desired capability and capability to tackle the threats from both the fronts.

The Indian indigenous fighter aircraft project received a strong boost when Prime Minister Narendra Modi took a sortie in the LCA trainer aircraft which was provided to the Indian Air Force only in early October this year.

The top Indian Air Force brass led by Air Chief Marshal VR Chaudhari has been fully backing indigenous projects and has achieved major success in this domain.

The Indian Air Force is also working on indigenising the Su-30MKI fighters by equipping them with the latest indigenous avionics and weapon systems.

It is also leading the programme to buy 156 Light Combat Helicopters of which 90 would be taken by the Indian Army and 66 by IAF.

The Defence Acquisition Council meeting cleared three major indigenous projects of the Indian Air Force in its last meeting worth over Rs 1.74 lakh crore. All three projects would be done by Hindustan Aeronautics Limited in partnership with private sector firms.

https://timesofindia.indiatimes.com/india/first-lca-mark1a-fighter-aircraft-squadron-to-be-deployed-at-nal-air-base/articleshow/105881188.cms

NDTV

Sat, 09 Dec 2023

India-Made Digital Maps to Help Fighter Jets Navigate in Hilly Areas

Indian fighter jets will soon be equipped with digital maps to help pilots avoid losing directions, said a top official from the Hindustan Aeronautics Limited (HAL), a premier aerospace and defence manufacturer. Pilots will be able to check the map on their cockpit display while flying and this will aid the navigation, said DK Sunil, director, Engineering and R&D, HAL.

In combat situations, digital maps are expected to help pilots avoid losing directions and stay within boundaries, the defence manufacturer expects. The process is already underway to equip the Indian fighter jets with the latest digital maps.

"The map will be available in 2D and 3D. Pilots will be alerted in advance if they are in a hilly area. This will reduce the possibility of accidents in high hilly areas. The digital map will also tell about enemy military bases and air defence systems," he added.

The digital maps are designed and produced in India in a boost to self-reliance in the defence sector.

They are being installed in all fighter jets, he said, adding that very few countries in the world have been able to make such maps themselves.

"We will fit these on every aircraft. All its hardware and software have been made in the country. Earlier, these maps used to be made in abroad only, but not we have started manufacturing them," said Mr Sunil.

https://www.ndtv.com/india-news/indian-fighter-jets-to-get-digital-maps-help-pilots-not-lose-directions-4648392

THE TIMES OF INDIA

Mon, 11 Dec 2023

IAF Goes Full Throttle to Turn into an 'Aerospace Power'

The Indian Air Force has gone full throttle to rename itself as the Indian Air and Space Force (IASF) as part of its ongoing overall drive to transform from "a potent air-power" to "a credible aerospace power" in the years ahead.

After formulating a new doctrine that focuses on effective exploitation of the "air and space continuum" and a "Space Vision 2047", IAF has now explained to the government in detail the rationale of being renamed as IASF. "We expect the proposal to be cleared soon," a source told TOI.

Concomitantly, IAF has cranked up efforts to fully exploit the final frontier of space rather than restricting it to the existing ISR (intelligence, surveilla-nce and reconnaissance), communication and navigation capabilities.

IAF is collaborating with Isro, DRDO, IN-Space (Indian National Space Promotion and Authorisation Centre) and the private industry to develop niche space-related technologies in a major way now.

"Work is underway in areas like PNT (positioning, navigation and timing), advanced ISR and communications, space weather prediction, space situati-onal awareness, space traffic management and the like," he said.

IAF, in fact, is looking at India having over 100 big and small military satellites with the help of the private sector in the next seven to eight years, while the tri-Service Defence Space Agency set up in 2019 also evolves into a full-fledged Space Command.

"Space has been incorporated in the training for officers and airmen, which includes exercises for space-related contingencies. It's a natural progression from air to space," the source said.

IAF chief Air Chief Marshal V R Chaudhari in recent months has also repeatedly stressed the need for India to develop both defensive and offensive capabilities in the space domain by building on the success of 'Mission Shakti' in March 2019. DRDO had then tested an anti-satellite (A-Sat) interceptor missile to destroy the 740-kg Microsat-R satellite at an altitude of 283-km in low earth orbit.

"Near space, at an altitude from 20 to 100 km, and outer space will be the ultimate high-ground in the battles of the future. Advanced winged bodies are being built to operate seamlessly between air and space. India has to be prepared for all this," the source said.

China, of course, is rapidly developing and deploying A-Sat weapons from "kinetic" ones like direct ascent missiles and co-orbital killers to "non-kinetic" high-powered lasers, electromagnetic pulse weapons, jammers and cyberweapons, as was earlier reported by TOI.

If China has the People's Liberation Army Strategic Support Force for the space domain, the US created a full-fledged Space Force (USSF) as a distinct branch of its armed forces in 2019. Several other countries like the UK, Japan, France and Russia also have space commands or wings in their air forces.

Consequently, IAF has no option but to gradually transcend from existing OCA (offensive counter air) and DCA (defensive counter-air) air-superiority missions to OCS and DCS operations also in the future.

Eventually, IAF's existing fully-automated air defence network called integrated air command and control system (IACCS) will also have to evolve into IASCCS. Space will have to be harnessed for the battlespace of the future.

https://timesofindia.indiatimes.com/india/iaf-goes-full-throttle-to-turn-into-an-aerospace-power/articleshow/105885149.cms

ThePrint

Mon, 11 Dec 2023

India's 'Air and Space Force': Spaceplane to 'Desi GPS', how IAF Renaming will Widen its Ambit

By Smruti Deshpande

The proposal to change the name of the Indian Air Force (IAF) to the 'Indian Air and Space Force' is likely to come through "anytime now", ThePrint has learnt.

"Space, as a domain, is adaptable to the air force and is only a natural transition," said a source in the IAF, adding that the proposal to change the force's name was sent to the Union government less than a year ago, in keeping with the defence minister's exhortation during the 37th Air Chief Marshal P.C. Lal Memorial Lecture on 5 May last year.

The IAF, Defence Minister Rajnath Singh had said at the time, must "become an aerospace force and be prepared to protect the country from the challenges of the future".

The Air Force is taking such measures to implement the changes, added sources in the defence establishment.

Indian armed forces already use NavIC, an Indian version of the US Global Positioning System, which is inherently a positioning, navigation and timing (PNT) service. NaVIC services are accessible at a higher accuracy for defence purposes and at relatively lower accuracy for civilian purposes.

Such indigenous positioning and navigation services are important, given India's experience of being denied GPS support during the Kargil War.

NavIC, at this point, is however not comparable to the GPS, which offers global coverage. NavIC services are limited to 1,500 km beyond the Indian landmass.

"Additional satellites as part of the NavIC constellation are under consideration to be launched to expand the coverage," said the IAF source quoted earlier.

In September, Indian Space Research Organisation (ISRO) chairman S. Somanath had said that the space agency is trying to increase the navigation coverage of NavIC to 3,000 km. The widening of the coverage would mean that it would include neighbouring countries.

In addition to this, the Air Force is looking to make better use of space-based electro-optical sensors as well as electronic intelligence gathering (ELINT).

In its initial stages, the IAF aims to strengthen intelligence, surveillance and reconnaissance (ISR) capabilities through space assets, it is learnt.

Accurate prediction of terrestrial weather using satellites and space-based sensors helps support air and ground operations, besides helping forces plan missions better.

Space-based sensors will help in the prediction of terrestrial weather and enable forces to carry out bigger and more accurate operations. Understanding space weather and constantly monitoring it is crucial to keeping space assets safe from various natural phenomena that can affect safe operation of satellites.

Likewise, space traffic monitoring would also help ensure safe and sustainable use of space and can prove effective in precisely timing satellite launches into space, avoiding any collision risks in orbit.

“It would be prudent for the country to merge this information with the Integrated Air Command and Control System (IACCS) of the IAF to provide comprehensive air and space situational awareness, since the IACCS is a fusion of all sensors held with the IAF, Army and Navy as well as civilian agencies,” said the IAF source quoted earlier.

Explaining the need for the Air Force to transition into space, Air Marshal G.S. Bedi (retd), former director general (inspection and safety) of the IAF and currently a Distinguished Fellow at the Centre for Air Power Studies, told ThePrint: “With time, more and more threats are likely to emerge from space and will have to be detected from space-based sensors to neutralise them in time.”

“Take, for instance, ballistic and hypersonic missiles. These are launched from far-off distances and cannot be detected by line-of-sight radars. Hence, ground-based radars and space-based sensors will have to be integrated for timely detection of every kind of threat. If the Air Force is renamed as the ‘Air and Space Force’, it will only help in building its orientation towards space where there is an increased need to focus more,” he added.

The IAF is also carrying out space-related contingencies and exercises that includes training to function in a GPS-denied environment, satellite-communications-denied environment, as well as space-based surveillance-denied conditions.

This is to ensure unhindered progress of operations, even in the face of adversity and threats that deny access to space-based capabilities.

Space vision 2047

In terms of accessing space, the IAF is looking at procuring the Reusable Launch Vehicle (RLV) that is under development at ISRO.

The IAF source told ThePrint that the autonomous landing trials of this spaceplane have already taken place and the Air Force is keen on buying the vehicle, which is capable of circling the Earth at an altitude of 350 km in space for nearly a month.

The vehicle is similar to a space shuttle and would have a payload capacity of 200-1,000 kg. It will also be capable of carrying a human onboard. RLV is not a standalone rocket, instead, it is a winged aerospace vehicle that is mounted atop a rocket.

Only the US and China are known to possess operational spaceplanes.

Furthermore, the IAF is looking at the procurement of soft kill and defensive options to deploy into space to safeguard Indian satellites from being attacked by adversaries, said the IAF source.

For comprehensive operations, the air force is collaborating with ISRO and Indian National Space Promotion and Authorisation Centre, or IN-SPACe, which is a single-window autonomous agency under the department of space of the Government of India, for growth of the overall space ecosystem.

Once the name change is in place and details are ironed out, the IAF will enhance collaboration with NewSpace India, a commercial arm of ISRO, which is a wholly owned government company under the administrative control of the department of space.

To that effect, the IAF has already started training officers and airmen to operate in space by introducing theory studies in institutes including the College of Air Warfare. The IAF’s think tank,

Centre for Air Power Studies, now holds space capsules simulations to understand the domain better, it is learnt.

This comes as part of IAF's space vision 2047, which aims to build deterrence and defence capabilities in space, and to enhance national security, bolster R&D capabilities as well as provide business for the private industry. To that effect, the government is looking at the launch of more than 100 military satellites in the next seven-eight years.

https://theprint.in/defence/indias-air-and-space-force-spaceplane-to-desi-gps-how-iaf-renaming-will-widen-its-ambit/1880160/

Sun, 10 Dec 2023

China Again Warns Pakistan Over Non-Payment of Defence Bills; It's Tactical Play, Say Experts

In a stern message to Pakistan, China has issued a warning over delayed payments for defence equipment, hinting at potential disruptions in the supply chain for the Pakistani army. Senior officials from both nations recently met to address the issue, emphasising the critical nature of timely payments. With approximately $1.5 billion pending in payments, experts believe that this is just a "tactic" being used by China to pressure Pakistan.

As per sources, the high-level meeting between China and Pakistan took place recently. The meeting underscored Pakistan's heavy reliance on China for its defence requirements, spanning from artillery to missile systems. The financial impasse, if prolonged, is likely to mount trouble for Pakistan as it will not only jeopardise the timely completion of key defence projects but will also have an adverse impact on the relations between the two countries.

It is no more a secret that China has been helping Pakistan build army capabilities for quite some time now. Quadcopter(s) seized during failed drug delivery attempts from Pakistan to India have been found to have Chinese origins. The recent comments made by the Indian Navy chief also highlighted the expanding collaboration between Pakistan and China in naval capabilities. Further, the infrastructure building and communication network along LoC, where China invested heavily, has been known for months now.

"Pakistan has been giving assurances after assurances but nothing much has changed on the ground either in terms of China getting its money back or any visible change on the security front. China knows for sure that it cannot rollback its support to Pakistan either in terms of credit-based supply of defence equipment or for CPEC. There is a reason to it…," said Major General Ashok Kumar (retd).

As per sources, the current payment issues extend beyond infrastructure or communication projects, encompassing crucial elements such as aircraft, VT-4 tanks, artillery guns, and missile systems.

Experts believe that while the issue of non-payment is true, it is just a "tactic" used by China to pressure Pakistan. Notably, the issue is not going to affect the relations between both countries.

"Issues of non-payment from Pakistan have become a regular feature more in its current economic profile. China has been making noises about getting its money back as per agreed terms and conditions. In fact, China has been threatening Pakistan both for its recovery of the financial dues

as well as the physical threat to its workers of CPEC corridor especially in Balochistan area," Major General Ashok Kumar (retd) said.

"The current threat may be posturing to get more concessions in lieu of its pending dues as China did in Sri Lanka to get the Colombo City project as well as the Hambantota project. The current effort of China is also intended to get more ownership in those Pakistani assets which will further Chinese national strategic interests," he added.

https://www.news18.com/world/china-again-warns-pakistan-over-non-payment-of-defence-bills-its-tactical-play-say-experts-8697982.html

South China Morning Post

Fri, 08 Dec 2023

'Alarming': North Korea's Hackers Target South's Defence Technology to Fund Weapons Programme

In a concerning turn of events, North Korea appears to be expanding its cyberattacks from phishing heists and ransoms to pilfering defence technology to help fund its weapons programmes in the face of tough sanctions, experts warn.

The cyber warfare tactics employed by the North underscored the critical need for South Korea to enhance cybersecurity measures as cooperation with other countries including China to identify responsible parties was difficult to achieve, they said.

A joint investigation by South Korean police and the US FBI found that a hacker group from the North, known as Andariel, had stolen technical data from dozens of South Korean defence contractors, pharmaceutical companies, financial firms and technical institutes, as well as research centres and universities.

"We've found, through cooperation with the FBI, that the North Korean hacking organisation Andariel hacked many domestic companies," the Seoul Metropolitan Police Agency's Security Investigation Support Division said on Monday.

The stolen data amounted to 1.2 terabytes (TB) of files – equivalent to around 230 high-definition films. This includes technology on advanced laser anti-aircraft weapons and their development plans, police said.

"This means the North's hacking attacks are evolving remarkably and becoming bolder" to target moneymaking technology and sensitive defence technology, former vice-defence minister Shin Beom-cheol said on SBS TV news talk show on Wednesday.

"This is something alarming for us," he cautioned.

Lee Il-woo of the Korea Defence Network think tank said laser anti-aircraft weapons were being developed by the South's military to cope with North Korean drones.

"The North has been persistent in attempting to hack into defence industries and I suspect there were many more incidents that went unnoticed or unreported," he said.

Andariel was said to have rented servers from domestic companies and used them as transit points to hack local tech, defence, pharmaceutical and financial companies. Many of the victims failed to notice the intrusions, while others chose not to report the damage to police over fears of losing credibility, according to the force.

The group also extorted 470 million won (US$356,000) worth of bitcoin from three South Korean firms in ransomware attacks.

A foreign woman was being investigated in connection with the ransomware attacks after some of the bitcoin worth 630,000 yuan (US$88,600) were transferred through her account and withdrawn from a bank in China, police said. She has denied the money-laundering charge.

“What has drawn my attention most in this police announcement is that North Korea appears to be expanding cyberattacks on defence contractors and pharmaceutical companies,” Kim Seung-joo, a cybersecurity professor at Korea University, told This Week in Asia.

Biotechnology has emerged as one of the most valuable sectors following the Covid-19 pandemic, with defence technology valued more than ever amid ongoing wars in the Middle East and Ukraine, prompting hackers worldwide to target such industries, Kim said.

“This incident highlights the need for local defence companies to further bolster their IT security,” he warned. Lee of the Korea Defence Network said researchers at various institutes and companies, including himself, endlessly received phishing emails carrying spyware that lured them into joining key seminars.

When the North paraded weapons for its “Victory Day” in July, Lee, a missile expert, said he was surprised to find striking similarities between the North’s new “Spike” missile used to strike ships or coastline batteries and the South’s tactical surface-to-surface missile.

“I suspect this missile technology might have been stolen from the South,” he said.

Entities from the North are believed to have stolen US$3 billion worth of cryptocurrency assets over the past six years, with about US$1.7 billion plundered last year alone.

In a report published last month, titled “Evolving North Korean Cyberattacks and Responses”, Kim Bo-mi at the Korea Institute for National Security Strategy said North Korea had stolen around US$340 million in cryptocurrency over the first three-quarters of the year, accounting for some 30 per cent of global cryptocurrency losses.

“North Korea seems to have found a breakthrough in the problem of cashing out cryptocurrencies by using Russian currency exchange services,” she said.

Most of the stolen assets are used to directly fund the hermit kingdom’s weapons of mass destruction and ballistic missile programmes, according to the Hacker News.

“[In the absence of] stronger regulations, cybersecurity requirements, and investments in cybersecurity for cryptocurrency firms, we assess that in the near term, North Korea will almost certainly continue to target the cryptocurrency industry due to its past success in mining it as a source of additional revenue to support the regime,” said Massachusetts cybersecurity company Recorded Future last month.

The United States government has reportedly sanctioned three mixers – Blender, Tornado, and Sinbad – and tens of individuals for laundering billions in assets for the North Korean regime.

About half of the laundered money is believed to have been used to bankroll the state’s ballistic missiles programme.

“North Korean threat actors also use the accounts and personal information of phishing victims to register verified accounts at trusted cryptocurrency exchanges where they can send the stolen cryptocurrency and cash out,” Recorded Future added.

Pyongyang has denied being involved in cybercrimes.

https://www.scmp.com/week-asia/politics/article/3244348/alarming-north-koreas-hackers-target-souths-defence-technology-fund-weapons-programme

FINANCIAL EXPRESS
Read to Lead

Fri, 08 Dec 2023

EU, US to Ramp up Competition in European Defence Market

By Anthony Bell

Russian-Ukrainian conflict gives a dramatic boost to the development of the defence market of the European Union member states. Driven by an arms deficit, which was caused by U.S.-EU military assistance to Ukraine since February 2022, Europe's arms market drastically needs replenishment of its depleted ammunition and weapon stocks. Moreover, this regional market is estimated to be the most lucrative in the foreseeable future. At the same time, it seems to be overcrowded in years to come.

The United States of America and the European Union bear the main burden of military-technical assistance to Kyiv: as of July 31, 2023, Ukraine has received no less than USD 46.8 billion from Washington, and an amount of some USD 65 billion was sent by European countries.

It is noteworthy that not only do the Western powers allocate some chunks of money to assist Ukraine, but they also send defence materiel in large quantities. Kyiv is known to have taken the deliveries of the following weapon systems:

113 fixed-wing and rotary-wing aircraft;

over 35 medium-altitude long-endurance unmanned aerial vehicles;

about 600 main battle tanks;

70 light armoured vehicles;

560 infantry fighting vehicles (both tracked and wheeled);

1,190 armoured personnel carriers (wheeled primarily);

about 1,000 mine-resistant ambush-protected vehicles;

1,840 4×4 and 6×6 armoured transporters for mechanized infantry;

430 towed artillery systems (105mm – 155mm);

360 self-propelled artillery systems (122mm – 155mm);

105 multiple rocket launchers (122mm – 227mm);

375 towed anti-aircraft guns;

170 self-propelled anti-aircraft guns;

no less than 250 launchers of various ground-based air defence weapons.

… and artillery ammunition, small arms and light weapons, fire support systems, etc.

Modern weapons (those produced after the collapse of the Soviet Union and the end of the Cold War) account for no less than 45-50% of the aforementioned numbers (in terms of quantity; when it comes to financial volume, they account for 75-80%). Those weapons need to be replaced urgently.

However, the European defence manufacturers are at their lowest manufacturing rates since 1991. According to various estimates, they will have been capable of replenishing the draining stocks of the European NATO members by 2032-2033. This forecast is the most positive; according to the

worst predictions, the weapon systems sent to Ukraine (as well as ammunition stocks) would be replaced and replenished by 2040. Thus, the European arms market, which is considered to be rather lucrative (up to 30-35% of the global arms market at its best), drastically needs new weapons – and needs it yesterday.

This case might spark fierce and even ruthless competition between European and US arms manufacturers. It is no secret that it is Europe that donates most of its weapons (even those of US origins) to Ukraine. The US assistance (even though it is vital) is limited to IFVs, APCs, some 155mm artillery, ammunition and support systems. Moreover, Washington delivers surpluses, while European countries dispatch linear vehicles right from combat units. The pieces of materiel in service must be replaced.

It is not the first attempt of US defence firms to land in Europe. In 2019, the US tried to ban several European programs aimed at the developing of sophisticated weapon systems. According to a notification issued by the U.S. Department of State and reportedly signed by Ellen Lord, Under Secretary of Defence for Acquisition and Sustainment, the implementation of Europe-driven projects aimed at the development of brand-new weapons would result in some economic and political ramifications.

The adoption of the statute of the European Defence Fund by the members of the European Union also irked Washington: according to the document, the EU countries were granted with the right to involve some non-European countries in defence research and development (R&D) processes, with intellectual property belonging to the EU members. The Permanent Structured Cooperation (PESCO) program, which embraces 25 EU state members is also declared to be non-compliant with US goals by Washington.

The EU's plans in the defence area pose a threat to the integration of the Transatlantic defence industry and military cooperation within the framework of the North Atlantic Treaty organization, some Washington officials noted.

According to the aforementioned US letter, the development of the EU-driven defence R&D programs will duplicate non-interchangeable defence systems, which is set to dramatically increase the EU's military expenditures and ramp up unnecessary competition between Europe and the United States. Washington also required European defence manufacturers to limit involvement of non-EU countries in the development of cutting-edge weapon systems.

As of October 2023, the presence of US commercially available defence hardware is mostly limited to Poland (M1 Abrams MBTs, M142 HIMARS rocket launchers, F-35 Lighting II joint strike fighter); some other European nations (Norway, the United Kingdom, the Netherlands, Denmark, Belgium, Finland, Italy, Switzerland). However, the competition between US and European defence firms will definitely step up.

https://www.financialexpress.com/business/defence-eu-us-to-ramp-up-competition-in-european-defence-market-3333276/

THE HINDU

Sat, 09 Dec 2023

IFCoN-2023: Technologies Galore at Mega Food Expo

The exhibition that got off to a start as part of the 9th International Food Convention (IFCoN-2023) here on Friday offers a peek into the world of food technologies, including the new launches by young scientists, besides the innovations by the CSIR labs that have come together to showcase their scientific expertise.

The exhibition on the premises of CSIR-CFTRI saw delegates from different parts of the country who had come to explore the innovations and achievements made in the area of food technologies. The expo was open to public from afternoon and will be open the entire day on Saturday.

CSIR-CFTRI Director Sridevi Annapurna Singh inaugurated the expo in the presence of Association of Food Scientists and Technologists president and IITR Director N. Bhaskar and other dignitaries.

The highlight of the expo is an exclusive pavilion on millets that showcases the technologies developed on millets by the CSIR-CFTRI and DRDO-DFRL and others. Those who availed the millet-based technologies from the CFTRI and launched the products commercially with value additions were also on display.

The expo also has a pavilion by the CSIR labs which have showcased their technologies and innovations. CSIR-Indian Institute of Toxicology Research, Lucknow, showcased technologies it developed in recent years which include innovations for checking adulteration in milk and fruit juices.

Entrepreneurs have developed health drinks based on millets using the technologies developed by the premier food lab and visitors were showing interest in the products since there has been a major push to encourage people to consume millets considering their health properties. The exhibitors were seen explaining their products to visitors.

Sahaja Samrudda, which preserves neglected crop varieties working with small farmers, has displayed a diverse variety of millets at the expo.

The essential oil-based bio fumigation technology is the innovation by the CFTRI that uses eco-friendly fumigants for safer applications for the protection of stored foodgrains from insect pests. The developed technology could be useful for bulk grain storages at warehouses, rural farms and other food grain storage depots, a note from the CFTRI said.

At rural farms, the technology may be useful for seed storage protection from insect pest infestations. Also, grain storage corporations, hotels, food processing industries, retails shops, hostel mess, midday meal schools, ration shops and others can use the technology for safe storage of food grains without any harmful impacts, the scientists said.

We Mill, an initiative by the rural women from Bilikere near Mysuru, whose efforts were cited at the inaugural session of the IFCoN-2023, has put up its stall displaying a diverse varieties of millet products. The products have been developed using the CSIR-CFTRI technologies by the SHG

members and include bakery products, beverages and so on. Ragi mudde mix and ragi huri hittu are among the products on display besides cookies.

Ice cream from coconut milk was another product that caught the attention of visitors. An initiative by a local entrepreneur from Koorgalli here, the products under the name ‘Abhay’ that include coconut are virgin coconut oil, flavored coconut milk, coconut cream and so on, made using the technologies developed by the CFTRI.

https://www.thehindu.com/news/national/karnataka/ifcon-2023-technologies-galore-at-mega-food-expo/article67618660.ece

INDIA TODAY

Fri, 08 Dec 2023

Aditya L-1 Captures the Sun. See First Pictures Taken by Indian Spacecraft here

The Solar Ultraviolet Imaging Telescope (SUIT) aboard the Indian Space Research Organization's (Isro) Aditya-L1 spacecraft has captured the first-ever full-disk images of the Sun in near ultraviolet wavelengths.

This remarkable achievement, announced on Friday, marks a significant milestone in solar observation and research.

The pioneering images, which cover a wavelength range from 200 to 400 nanometers, offer unprecedented insights into the Sun's photosphere and chromosphere — the visible "surface" of the Sun and the transparent layer just above it, respectively.

These layers are crucial for understanding various solar phenomena, including sunspots, flares, and prominences, which can have profound effects on space weather and Earth's climate.

SUIT was powered on November 20, 2023, and after a successful pre-commissioning phase, it captured its first light science images on December 6, 2023.

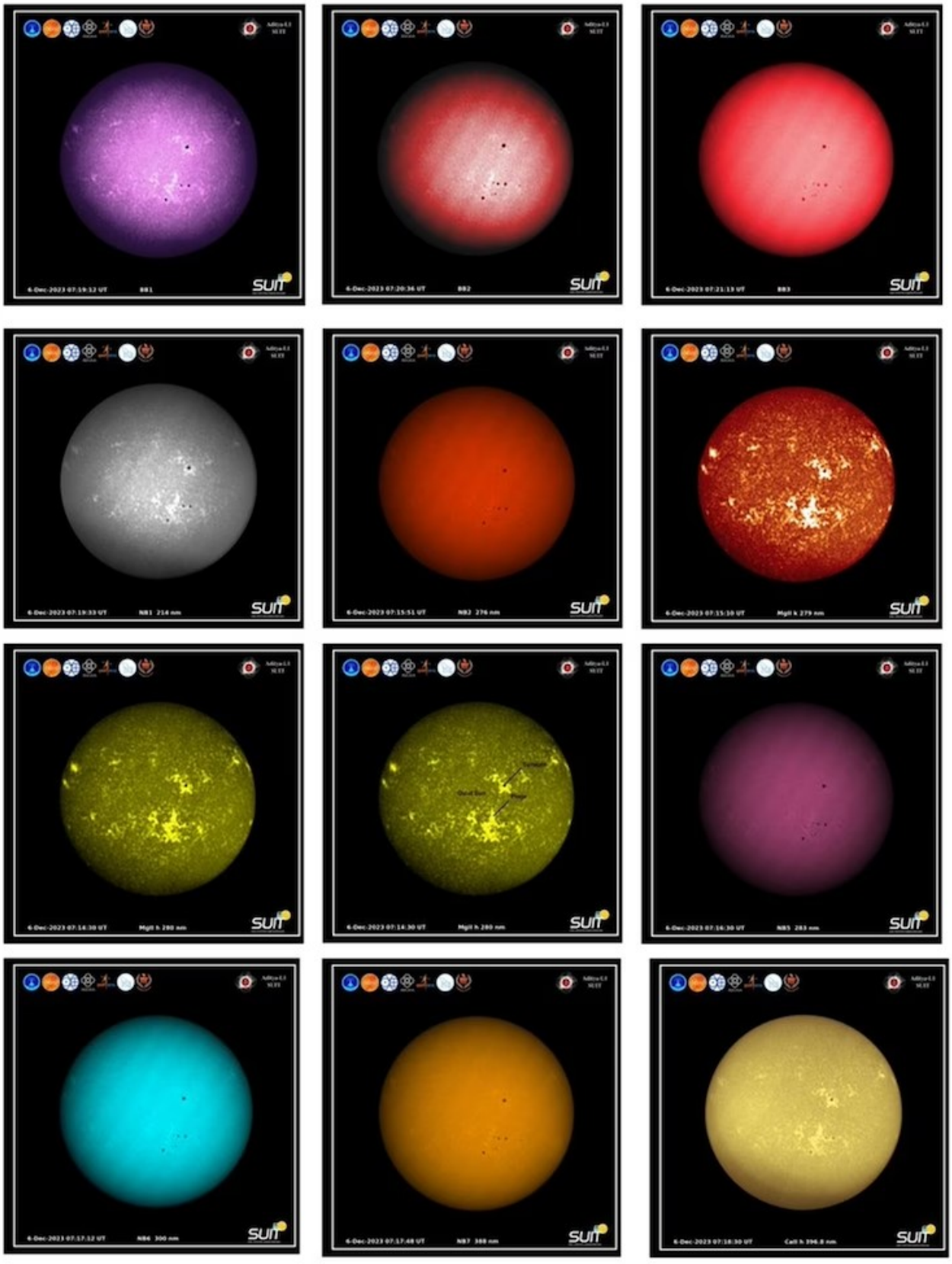
The telescope utilises eleven different filters to provide detailed observations of the Sun's atmosphere, revealing features such as sunspots, plage regions, and the quiet Sun. These filters allow scientists to study the dynamic coupling of the magnetized solar atmosphere and the effects of solar radiation on Earth's climate.

Developed by a team of 50 scientists, researchers, and students from Pune's Inter-University Centre for Astronomy and Astrophysics (IUCAA), SUIT is one of seven payloads onboard Aditya-L1.

The mission aims to address core questions about the propagation of energy from the photosphere to the chromosphere and beyond, the triggers behind dynamic solar events, and the initial kinematics of erupting prominences.

The data collected by SUIT will revolutionize our comprehension of solar atmospheric dynamics, shedding light on the intricate coupling and energy transfer mechanisms within the Sun's layers.

By capturing images at different heights of the solar atmosphere, SUIT will also contribute to our understanding of the Sun-climate relationship and the potential impact of UV radiation on skin cancer risks.



These unprecedented images were taken using eleven different filters. (Photo: Isro)

As Aditya-L1 continues its journey to Lagrange Point 1, the scientific community had been eagerly anticipating the first images from India's maiden solar probe.

ISRO said that SUIT observations will help scientists study the dynamic coupling of the magnetized solar atmosphere and assist them in placing tight constraints on the effects of solar radiation on Earth's climate.

https://www.indiatoday.in/science/story/isro-aditya-l-1-captures-the-sun-full-disk-see-first-picture-here-2473741-2023-12-08