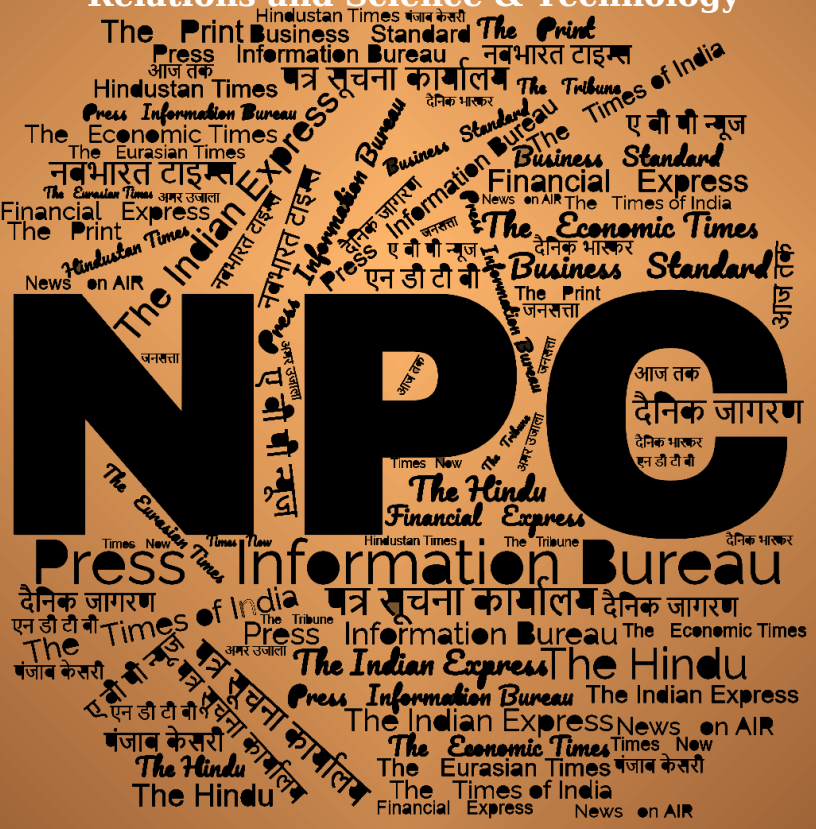
मई
May
2023

खंड/Vol. : 48 अंक/Issue : 96
24/05/2023

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

Tue, 23 May 2023

Indian Navy's Guided Missile Destroyer INS Mormugao Carries out Engagement of Sea-Skimming Supersonic Target

The Indian Navy successfully conducted an engagement with a sea-skimming supersonic target using its most recent indigenous guided missile destroyer INS Mormugao.

India's maritime force said that this maiden effort depicts the Navy's future-proof warfare readiness and commitment towards Aatmanirbhar Bharat.

"Indian Navy's latest indigenous guided missile destroyer INS Mormugao successfully carried out engagement of sea-skimming supersonic target. This maiden endeavour showcases IN's Future Proof Combat Readiness and commitment towards Aatma Nirbhar Bharat," the Indian Navy said in a statement.

Mormugao, which is named after the historic port city of Goa on the west coast, coincidentally launched its first sea attack on December 19, 2021. This was when Goa celebrated 60 years of independence from Portuguese rule.

The Indian Navy said that the ship, which measures 163 m in length, and 17m in breadth with a displacement of 7,400 tonnes, can rightfully be considered one of the most powerful warships to have been constructed in India.

India performs maiden test of sea-based ballistic missile interceptor

Last month, India's ambitious ballistic missile defence system achieved success with the first flight test of an endo-atmospheric interceptor missile from a ship in the Bay of Bengal off the coast of Odisha.

By engaging and neutralising a hostile ballistic missile threat, the sea-based missile's trial on Friday, according to the defence ministry, placed India into a select group of countries with such a capability.

AWACS (airborne warning and control systems) and other hostile aircraft, as well as approaching long-range nuclear missiles, can be intercepted by BMDs.

The Indian Navy and the Defence Research and Development Organisation (DRDO) were commended by Defence Minister Rajnath Singh for the successful testing of the ship-based ballistic missile defence (BMD) system's capabilities.

"The DRDO and the Indian Navy successfully conducted a maiden flight trial of sea-based endo-atmospheric interceptor missile off the coast of Odisha in the Bay of Bengal on April 21," the ministry said in a statement.

India joins the elite club

India has been working to improve its ability to intercept enemy ballistic missiles both inside and outside of the atmosphere of the earth.

The endo-atmospheric missiles are those that function within the earth's atmosphere and have a range of less than 100 kilometres. According to specialists, exo-atmospheric missiles are capable of completing missions in the uppermost part of the earth's atmosphere.

India's phase-II ballistic missile defence interceptor AD-1, which can engage a wide variety of targets, successfully completed its first flight test in November.

Long-range ballistic missiles and planes can be intercepted by the AD-1 long-range interceptor missile in both "low exo-atmospheric" and "endo-atmospheric" settings.

https://www.wionews.com/india-news/indian-navys-guided-missile-destroyer-ins-mormugao-carries-out-engagement-of-sea-skimming-supersonic-target-595593

FINANCIAL EXPRESS
Read to Lead

Tue, 23 May 2023

IIT Kanpur, C3iHub Collaborate with Tata Advanced Systems for Cybersecurity Solutions

C3iHub, a cybersecurity Technology Innovation hub at IIT Kanpur, supported by the Department of Science and Technology, Government of India under NM-ICPS Mission, has signed a Memorandum of Understanding (MoU) with the Tata Advanced Systems Limited (TASL).

This partnership brings together two organizations to advance the realm of cybersecurity through collaborative research, innovation, and development.

The MoU was officially signed by Tanima Hajra, Chief Operating Officer (COO), C3iHub; and Suresh Baroth, Head, Weapons, Sensors & Security of Tata Advanced Systems Limited.

By joining forces, C3iHub and TASL aim to leverage their expertise, knowledge, and resources to address the pressing challenges posed by ever-evolving cyber threats in the defense sector.

Manindra Agrawal, Project Director of C3iHub informed that “C3iHub has gradually developed its expertise in the field of cybersecurity. With an aim to share our expertise, the MoU signing with the TASL is a major step in this direction. I look forward for a greater collaboration.”

C3iHub at IIT Kanpur is involved in cyber security by establishing a research center that addresses all aspects of critical infrastructure protection. It focuses on analysing security vulnerabilities and developing tools to address them at various levels of system architecture, translating these tools into deployment-ready software, to nucleating start-ups developing such tools at scale.

Suresh Baroth, Head, Weapons, Sensors & Security of TASL said, “TASL made various weapon systems for Indian Armed Forces and our main objective is to Cyberproof and Cybersecure these systems and no one is better than C3iHub to test these systems.”

C3iHub is a Technology Innovation Hub (TIH) established at the Indian Institute of Technology Kanpur, funded by the Department of Science and Technology, Government of India, under the National Mission on Interdisciplinary Cyber-Physical Systems.

https://www.financialexpress.com/business/defence-iit-kanpur-c3ihub-collaborate-with-tata-advanced-systems-for-cybersecurity-solutions-3099067/

ThePrint

Tue, 23 May 2023

Indian Delegation Attends Langkawi International Maritime and Aerospace Exhibition in Malaysia

An Indian delegation attended the 16th Langkawi International Maritime and Aerospace Exhibition, being held in Malaysia from May 22-25, the Defence Ministry said here on Tuesday.

Established in 1991 and held biennially, the exhibition — LIMA — is one of the largest maritime and aerospace exhibitions in the Asia-Pacific, it said in a statement.

"An Indian delegation, led by Additional Secretary (Defence Production) T Natarajan, attended the 16th Langkawi International Maritime and Aerospace Exhibition (LIMA 23), being held at Langkawi, Malaysia between May 22-25.

"The Additional Secretary (Defence Production) also called on Malaysian Minister of Defence Dato' Seri Mohamad Hasan on the sidelines of the exhibition," the ministry statement said.

This year's edition involves over 600 exhibitors from more than 30 countries, including India.

https://theprint.in/india/indian-delegation-attends-langkawi-international-maritime-and-aerospace-exhibition-in-malaysia/1590677/

FINANCIAL EXPRESS
Read to Lead

Tue, 23 May 2023

Lessons for India in the Indian Ocean Region

By Radhey Tambi

Last week, while returning from Argentina, a Chinese fishing vessel, Lupeng Yuanyu 028, sank in the southern Indian Ocean. Onboard were 39 crew members from China, Indonesia, and the Philippines. By undertaking an active rescue operation, India has once again proved to be a responsible net security provider in its front yard. Along with India, Australian Maritime Safety Authority (AMSA) was coordinating the effort by deploying P-8A aircraft for the search. While the Indian Navy deployed its Air Maritime Reconnaissance asset, P 81 Poseidon. Subsequently, P 81 Poseidon also sighted the fishing vessel's life raft and guided another fishing vessel Lupeng Yuanyu 017 towards it. The operation has once again brought to the fore two key issues. First, the importance of air power on the high seas, and second enhanced cooperation among the littoral countries will keep the Indian Ocean safe and secure.

The shift from Euro Atlantic to the Indo-Pacific region has brought immense importance to the Indian Ocean Region (IOR) and its littorals. Today, the region is at the crossroads of various traditional and non-traditional issues. Former includes the power projection of regional and distant powers and maritime disputes in the region. The latter includes issues like illegal, unregulated and unreported (IUU) fishing; piracy and armed robbery; sea-based terrorism; illegal drug trade; human trafficking; oil spills; and search and rescue operations. To deal with either of the issues maritime domain awareness (MDA) is essential.

To put it in simple terms, MDA means situational awareness in the ocean, and air power plays a significant role towards this. In this direction, P 81 Poseidon has completed a decade in the Indian Navy with almost 40,000 hours of operational flying. The aircraft was imported from the United States and has allowed India to leverage its geography in the IOR by being a first responder. It is equipped with systems that are capable of long-range anti-submarine warfare, anti-surface warfare, anti-ship missiles, intelligence, surveillance, and reconnaissance in support of broad area, maritime and littoral operations. It has excellent surveillance quality and has helped India in carrying out ocean mapping operations in the region. However, India currently has less than fifteen such aircraft, while the vastness of the Indian Ocean requires India to have at least 25-35 Poseidons, according to the Pentagon report.

Air power comes with certain advantages like speed, agility, and swiftness. It can complement the role of the navy which can move large aircraft carriers, ships, and vessels. While the navy can track the ships with access to the information centres. Air power gives a top-down view, by covering a larger bandwidth and assisting in effectuating better monitoring of a region. Therefore, any coherent and broad-based maritime reconnaissance will remain deficient without an effective cover of air power. It's time New Delhi exercises domain dominance in the region where it is centrally located.

Unlike the land borders, which can be fixed and demarcated. Maritime boundaries are more fluid and difficult to secure without a cooperative mechanism. In this regard, India and Australia which form the bookends of the Indian Ocean region can play a significant role. For India, the region from the eastern coast of Africa to the western shores of Australia is considered the primary area of responsibility. Simultaneously, the Northeastern Indian Ocean through maritime Southeast Asia with the Pacific is the primary area of military interest for Australia's National Defense. Thus, the northeast part of the Indian Ocean is an overlapping area between New Delhi and Canberra. This is also the area where both the maritime neighbours have an extended area of territorial jurisdiction i.e., Andaman and Nicobar Islands (India) and Cocos / Keeling Islands (Australia). Any joint operation from the islands will certainly add value to the evolving security architecture of the region.

Defense cooperation is emerging as an important arena of cooperation between New Delhi and Canberra. The desire to further enhance this convergence is reflected in the Australian Defense Strategic Review 2023, which seeks to further strengthen its defense cooperation in the IOR. Currently, the Andaman and Nicobar, and Cocos Islands are used individually by both countries to conduct surveillance in the Indian Ocean. However, a coordinated MDA in the region by using each other's island territories will add to the interoperability and act as a force multiplier in the region. As the Indian Ocean is too vast a region to be secured by any one country. Any cooperative mechanism and a burden-sharing model is a need of the hour for the region to deal with the distinct challenges.

Such a mechanism can also be extended to other countries in the region like La Reunion islands of France, where India recently used its P 81 Poseidon. Such partnerships not only strengthen bilateral ties but will also lay the foundation of a security architecture based on collective responsibility and cooperation. As India is a residential and leading player in the region, it must use its diplomatic skill, political willingness, information dominance, military cooperation, and economic cooperation to construct a security environment that is free, open, stable, and prosperous.

https://www.financialexpress.com/business/defence-lessons-for-india-in-the-indian-ocean-region-3098607/

FINANCIAL EXPRESS
Read to Lead

Tue, 23 May 2023

US 'Natural Partner' in Atmanirbhar Bharat Initiative, Says Vivek Lall

Describing "Atmanirbhar Bharat" as a brilliant initiative which was long overdue, a top Indian-American CEO has said that the US is a natural partner in India's initiative to make the country self-reliant in various fields, particularly in defence. The remarks by Vivek Lall, Chief Executive of General Atomics Global Corporation, came ahead of Prime Minister Narendra Modi's State visit to the US in June.

"I think it (Atmanirbhar Bharat) is a brilliant initiative by Prime Minister Narendra Modi. Atmanirbhar Bharat is a long overdue process that needs to evolve and, in its definition, itself is a lot of collaboration, a lot of R&D (Research and Development), joint R&D, and a lot of technologies that need to be incubated for the betterment of India," Lall told PTI in an interview.

"It is a very laudable initiative. I think the US is a natural partner in that. The ability of the US and India to work together to achieve the Prime Minister's goals is probably the best path forward for success, not only in India, but as well as in the US," he said Lall, one of the five American CEOs who Modi met during his last visit to the city, said the prime minister has "a very bold and strategic vision" for the India-US relationship.

It is deeply admirable what the prime minister has put in place, both in terms of a policy standpoint and also an execution standpoint, he said. "Very recently, in January this year, the initiative on critical and emerging technologies or ICET (Initiative on Critical and Emerging Technology) dialogue was inaugurated by the national security advisors from India and the US, in critical emerging technologies, things like artificial intelligence, semiconductors and quantum computing and so forth," Lall said.

This shows that the vision of Prime Minister Modi is farsighted, and he has the ability to garner the interest of both countries in the common goal of keeping a free and clear Indo-Pacific in terms of the geopolitics of the day, as well as looking at the century of innovation, he said. "And I think both countries are best suited to work together," Lall said in response to a question. Lall said the US-India defence relationship has really evolved over the last couple of decades that he has been observing it.

"The relationship has taken on a very strategic meaning at this point in time, where both countries have come together, not only in terms of defence trade but also in terms of real co-development, co-production and technology sharing, as well as military-to-military engagements," he said. "So, I think that relationship with the announcements of the various foundational agreements over time and India being declared as a major defence partner has resulted in a very strong convergence," he said.

Among the significant defence agreements signed in recent years are the Logistics Exchange Memorandum of Association (2016); the Memorandum of Intent between the US Defence Innovation Unit (DIU) and the Indian Defense Innovation Organisation – Innovation for Defence Excellence (2018); Communications Compatibility and Security Agreement (2018); Industrial Security Agreement (2019); Basic Exchange and Cooperation Agreement (2020).

The current India-US defence cooperation is based on the "New Framework for India-US Defence Cooperation", which was renewed for a period of ten years in 2015. In 2016, the defence

relationship was designated as a Major Defence Partnership (MDP) to build a comprehensive, enduring and mutually beneficial defence partnership.

On July 30 2018, India was moved into the Tier-1 of the US Department of Commerce's Strategic Trade Authorisation license exception. Last week, US Under Secretary of Defence for Policy, Colin Kahl, co-chaired the 17th US-India Defence Policy Group alongside India's Defence Secretary Giridhar Aramane.

The Dialogue advanced an ambitious agenda — including industrial cooperation, information-sharing, maritime security, and technological collaboration — that reflects the robust and comprehensive defence ties between the United States and India, according to Department of Defense Spokesman Lt Col David Herndon.

In a recent interview with PTI, US Assistant Secretary of State for South and Central Asia Donald Lu said that it makes eminent sense for India to produce world-class defence equipment for its own needs, and potentially as an exporter, for the world."We are already major partners in the defence field. We have over the last 20 years has a defence trade that's over USD 20 billion. And I know our private companies and our governments, our ministries of defence are talking on a regular basis about how we cooperate," he said.

Lu pointed out that last April during the 2+2 Dialogue involving India's Minister of Defence, and External Affairs Minister and their American counterparts Secretary of Defense and Secretary of State, for the first time there was American support for Prime Minister Modi's Make in India initiative.

"We can see that India is shifting away from dependency on other countries and looking to produce defence supplies, defence equipment in India itself and that's a process we strongly support," he said "And I hope in the coming months that you will see announcements, a major collaboration between our countries for sophisticated, modern, capable defence equipment that will be made in India," Lu said.

https://www.financialexpress.com/business/defence-us-natural-partner-in-atmanirbhar-bharat-initiative-says-vivek-lall-3098388/

ARMY TECHNOLOGY

Tue, 23 May 2023

Australian Defence Force Researches Hazardous Environments

A new research centre has opened that will support the Australian Defence Force (ADF) operate in hazardous environments.

The Centre for Advance Defence Research and Enterprise (CADRE), based at the University of Melbourne, opened on 19 May 2023. Bringing together academic and industry organisations, the CADRE will develop new concepts and technologies to protect military personnel.

Chief Defence Scientist, Professor Tanya Monro, said CADRE would mobilise the science, technology and innovation ecosystem.

"CADRE is bringing together some of the best and brightest minds in academia and industry so we can protect our warfighters in chemical, biological, radiological and nuclear threat environments," Monro stated. The Commonwealth signed an agreement with the University of Melbourne. The institution will lead in a close partnership with the University of Adelaide, Queensland University of Technology and the University of New South Wales.

Another eight academic institutions and 34 industry partners from multiple sectors will support the CADRE. The government will allocate A$4.25m ($2.8m) to the enterprise over the next five years.

Strategic allies with strategic differences

The enterprise draws on a mix of different parts – from academia, industry and government – to come up with innovative solutions to the problem of operating in dangerous environments.

Lately, the United States has exclusively relied on the private sector to maintain a competitive military advantage; especially now as the Biden administration pursues China with no real strategic objective. Growing tensions have led the US intelligence community to assert in a Senate Select Committee in March that the private sector is the be all and end all of military advancement.

The Director of the Central Intelligence Agency, William Burns, went so far as to say that the technologies supplied by the private sector have become “the main determinant of our future as an intelligence service.”

It is surprising that Australia,which is closer to the fray in the Indo-Pacific, does not emulate its key strategic ally. The CADRE deviates from US reliance by plugging in several sources of innovation that are centralised by the government.

Contrary to Burns’ depiction of the US military-industrial complex, Australia determines the direction of its technological advancement to some extent.

Australia hedges its bets

CADRE Director, Professor Jia-Yee Lee, said that members would collaborate based on their individual strengths and create cross-functional teams to achieve targeted outcomes.

“We will join together key elements of the innovation life cycle, from laboratory experiments, to prototypes, to productisation and finally translating to defence end-user capability,” Lee stated.

Australia’s Defence Strategic Review (2023) suggests this holistic approach to accelerate technologies.

“Relevant programmes need to accelerate technology research and innovation relating to capability. They must also enable appropriate signalling of demand to research and industry sectors.

“[This will] provide clear methods of communication and linkages to national research bodies (including the university sector and various innovation bodies).”

By “signalling demand”, the ADF takes a hands-on approach in determining the field in development. The result of this strategy is that Australia places greater clarity on its objectives. Meanwhile, the US jumps from one field to another – from hypersonics to quantum computing – pumping cash injections. All without a course of action other than maintaining its military advantage over China.

https://www.army-technology.com/news/australian-defence-force-researches-hazardous-environments/

WION

Wed, 24 May 2023

Russia Intercepts Two US Military Jets over Baltic Sea

Russia claimed on Tuesday (May 23) that it had scrambled a Su-27 fighter jet to "prevent violations of the state border" by two US Air Force strategic bombers flying over the Baltic Sea.

The Russian defence ministry said, "After removing the foreign military aircraft from the Russian state border, the Russian fighter went back to its air base."

The defence ministry claimed that the two aircraft were B-1 strategic bombers belonging to the US Air Force. According to the statement, the army prevented the violation of the border.

The ministry added, "The flight of the Russian fighter was carried out in strict accordance with international rules for the use of airspace."

Similar incidents have happened in the past as well and in the aftermath of the Russia-Ukraine war, they become detrimental.

Just over a week ago, Russia said that two aircraft were intercepted attempting to "violate" its airspace. One of the aircraft was German and the other one was French. Before that, in mid-April, Russia sent a fighter jet to escort a German naval aircraft over the Baltic Sea.

When a Russian jet hit a US drone

A major incident happen when an American drone crashed after colliding with a Russian jet over the Black Sea in March.

The US military said that a Russian Su-27 fighter jet downed an American MQ-9 Reaper drone, and called it a "reckless" incident.

A video was released by the Pentagon, which showed the Russian military jet coming very close to a US military drone and dumping fuel near it. The US said that the Russian aircraft damaged the propeller during the intercept.

The Pentagon said that the de-classified video, which is about 40 seconds long, has been edited by the US military for length but shows events in sequential order.

Meanwhile, Russia has denied the accusations levelled by the US that its jets acted recklessly. Moscow said that the drone crashed after making "sharp manoeuvres," having "provocatively" flown close to Russian air space near Crimea.

A ministry statement had said that Russian Defence Minister Sergei Shoigu told his US counterpart that the American drone flights near Crimea's coast "were provocative in nature" and could lead to "an escalation in the Black Sea zone."

After the incident, General Mark Milley, chairman of the US Joint Chiefs of Staff had said: "There is a pattern of behaviour recently where there is a little bit more aggressive actions being conducted by the Russians."

https://www.wionews.com/world/russia-intercepts-us-military-jets-over-baltic-sea-595713

Airforce Technology

Tue, 23 May 2023

UK Royal Air Force Receive Final A400M Atlas

The UK Ministry of Defence (MoD) subsidiary, Defence Equipment and Support (DE&S), has delivered the 22nd and final A400M Atlas transport aircraft to the UK Royal Air Force (RAF).

The aircraft’s arrival at RAF Brize Norton, in Oxfordshire, marks the end of the UK’s order from Airbus, the original equipment manufacturer.

The 22 Atlas aircraft have replaced the C-130J; the UK MoD listed its legacy fleet for sale in October 2022. The withdrawal of the 14-strong C-130J fleet will be a blow to the service's airlift capability, although the induction of the larger Atlas will offset the loss.

The four-engine turboprop aircraft can deliver 37 tonnes of cargo over 2,000 nautical miles at speed. Its short field performance enables it to operate from short unprepared as well as semi-prepared strips, all achievable whilst using night vision goggles.

A rocky path to procurement

The MoD faced challenges in the procurement process, which the National Audit Office (NAO) outlined in a report published in November last year. The report detailed concerns that the MoD could not afford to induct more than 22 units.

"An option to purchase additional A400M aircraft was assessed as unaffordable. Air Command is developing an affordable choice to improve A400M availability."

When the UK listed the C-130J fleet for sale at the end of last year, it was amid serious economic decline in the country. Defence equipment sales would offer a way to cut sustainment costs while also generating some funds that could be returned to the ministry for use elsewhere.

As the RAF lacks the intended number of units it sought, the NAO's assertion tells us that we can expect future contracting work to enhance the capabilities of the RAF's new fleet.

What does the Atlas bring to the table?

Besides deploying troops and equipment between theatres, the aircraft has been used to support humanitarian missions. Most recently the aircraft evacuated British nationals from war-torn Sudan.

Since entering RAF service in 2014, the Atlas has performed relief operations in the Caribbean and contributed to the military response to COVID, transporting patients, equipment and vaccines. It played a pivotal role in the evacuation of personnel from Afghanistan and Sudan and has provided support to UK Defence operations around the globe, including the Middle East, Falkland Islands, and Mali.

https://www.airforce-technology.com/news/uk-raf-receive-final-a400m-atlas/

NDTV

Wed, 24 May 2023

US Sanctions North Korea Over 'Malicious Cyber Activity'

The US government on Tuesday announced new sanctions on North Korean groups for what is said was the use of hackers to raise money for Pyongyang's weapons programs.

The targets of the sanctions "generate revenue by stealing funds from global financial institutions and other entities," Secretary of State Antony Blinken said in a statement.

North Korea deploys thousands of tech workers abroad who engage in "malicious cyber activities that support the... government," a Treasury Department statement said.

Four organizations were sanctioned, including the Pyongyang University of Automation, and the Chinyong Information Technology Cooperation Company, which the agency said controls workers deployed to Russia and Laos.

The other two organizations are the Technical Reconnaissance Bureau, an offensive cyber tactics unit which is subordinate to North Korea's premier intelligence bureau, and the 110th Research Center, which has targeted media and defense companies in South Korea, it said.

Also sanctioned was Kim Sang Man, who Treasury said was based in Vladivostok, in Russia's far east, and served as a paymaster.

Blinken said the sanctions were coordinated with South Korea.

North Korea "maintains a workforce of thousands of highly skilled IT workers around the world, primarily in the People's Republic of China and Russia," the Treasury statement said.

The workers often use stolen identities and proxy accounts to apply for jobs at foreign companies, using legitimate employment to shield other activities, it said.

The Treasury statement cited a UN report in March that said North Korean hackers "stole more virtual currency in 2022 than in any previous year, with estimates ranging from $630 million to over $1 billion -- reportedly doubling Pyongyang's total cyber theft proceeds in 2021."

North Korean hackers rose to prominence in 2014 with their alleged role in the hack of Sony Pictures in retaliation for the release of a satirical movie, "The Interview," that made fun of North Korean leader Kim Jong Un.

The US administration will continue to combat North Korea's "continued efforts to steal money from financial institutions, virtual currency exchanges, companies, and private individuals around the world," said Brian Nelson, Treasury undersecretary for terrorism and financial intelligence.

https://www.ndtv.com/world-news/us-sanctions-north-korea-over-malicious-cyber-activity-4060789

The EurAsian Times

Wed, 24 May 2023

US Targets 2024 for 'Unleashing' 6th-Gen NGAD Fighter Program; USAF Committed to 'Steer Clear' of F-35 Blunders

By Ashish Dangwal

The US Air Force Secretary Frank Kendall announced on May 22 that the Air Force is determined to prevent the errors that plagued previous programs, such as the F-35, as it commences work to develop the Next Generation Air Dominance (NGAD) fighter.

During a roundtable hosted by the Defense Writers Group, Kendall informed reporters that a crucial aspect of the Air Force's strategy is guaranteeing unrestricted access to the necessary sustainment data from the contractor responsible for constructing the Next Generation Air Dominance platform.

Kendall expressed a firm commitment to avoiding repeating past mistakes made in the F-35 program. Specifically, the service aims to avoid the failure to acquire rights to all the sustainment data of the fighter from contractor Lockheed Martin.

The USAF Secretary explained that when the F-35 program was initiated over two decades ago, it embraced an acquisition philosophy called Total System Performance.

This approach allowed the contractor who won the program to retain ownership throughout its entire lifecycle. However, Kendall indicated that the Air Force now recognizes the drawbacks of this approach and aims to adopt a different strategy for the new sixth-generation fighter. The Total System Performance resulted in the creation of a perpetual monopoly, Kendall added.

He also acknowledged the challenges of overcoming acquisition malpractice during the F-35 program. He stressed that the service would not repeat those mistakes with the Next Generation Air Dominance (NGAD) project.

In addition, Kendall identified excessive concurrency as a significant issue that impeded the F-35 program's progress. Excessive concurrency refers to an aircraft's simultaneous development and procurement, making it more challenging to address problems identified during testing.

The USAF Secretary confirmed that there would be some concurrency in the Next Generation Air Dominance (NGAD) and the B-21 Raider stealth bomber program.

However, he noted that the Air Force intends to approach this concurrency rationally to minimize excessive risk.

Kendall expressed his desire for the government to have greater control over the NGAD program than the F-35. This includes ensuring access to necessary intellectual property and implementing modular open system design, enabling the Air Force to introduce new suppliers and upgrade system components as needed.

Air Force To Select Only One NGAD Design

Kendall also revealed that, after years of prototype work on different designs by multiple companies, only one company will be chosen in 2024 as the overall designer and developer of the Next Generation Air Dominance (NGAD) crewed fighter.

Given the anticipated high costs of the Next Generation Air Dominance (NGAD) program, Secretary Kendall stated that it would be financially unfeasible for the Air Force to collaborate with multiple contractors.

Kendall previously informed lawmakers in April 2022 that he expected each aircraft to cost hundreds of millions of dollars.

As a result, the Air Force will focus on working with a single contractor for the NGAD program to ensure affordability and effective management of resources. "We're not going to do two NGADs. We're only going to do one," Kendall said.

Kendall further explained that the initial concept of rapidly iterating Next Generation Air Dominance (NGAD) platforms through regular competitions, as former Air Force acquisition executive Will Roper advocated, has been abandoned.

This concept aimed to provide consistent work to contractors to maintain their industrial capability.

The Air Force recently issued a classified solicitation on May 18, inviting engineering and manufacturing development proposals for the Next Generation Air Dominance program.

The selection of a winner is expected to take place in 2024; however, limited additional information regarding the highly classified program was disclosed. The exact size of the NGAD fleet remains uncertain.

While Kendall mentioned a "notional" purchase of approximately 200 aircraft, Air Force experts suggest the more likely objective is around 250 aircraft. This number is the minimum required to fulfill peacetime obligations while maintaining minimal wartime surge capability.

The service also expressed a greater focus on the modernization of the Air Force rather than its force structure, emphasizing the long-standing neglect in this area.

He highlighted China's aggressive advancements in air superiority and defense capabilities, stating that the response has been insufficiently swift.

To address this, Kendall stated his willingness to take some risks with the force structure while prioritizing modernization. The Air Force aims to deploy systems that instill fear in China and contribute to effective deterrence.

The Next Generation Air Dominance program is pivotal in this strategy, as outlined in the Air Force's May 18 announcement.

NGAD is designed to possess enhanced lethality and excel in highly-contested operational environments, enabling survival, persistence, interoperability, and adaptability within the air domain.

https://eurasiantimes.com/us-targets-2024-for-unleashing-6th-gen-ngad-fighter-progra/

Science & Technology News

INDIA TODAY

Tue, 23 May 2023

ISRO to Launch New Navigation Satellite: All You Need to Know About Navic, India's Answer to GPS

The Indian Space Research Organisation (ISRO) will launch the NVS-01 navigation satellite, part of the Navigation with Indian Constellation (NavIC) series to space on May 29.

The 2,232-kilogram satellite will lift off onboard India's workhorse, the Geosynchronous Satellite Launch Vehicle (GSLV) to space from the second launch pad at the Satish Dhawan Space Centre in Sriharikota. It will be deployed in the Geosynchronous Transfer Orbit.

NVS-01 is the first of the second-generation satellites envisaged for the Navic constellation that is designed to sustain and augment the NavIC with enhanced features.

What is Navic?

Have you ever used Google Maps or Apple Maps to navigate from one location to another? This is called the Global Positioning System (GPS), which is a free service that is provided by a series of satellites in orbit maintained by the US government. NavIC is India's answer to the GPS.

The Navigation with Indian Constellation (NavIC) is a regional navigation satellite system developed by Isro that is a constellation of seven satellites in orbit that work in tandem with ground stations. The network provides navigational services to both general users and the strategic users, namely the armed forces.

The system was developed looking at the growing requirements of the Civil Aviation sector in the country for better positioning, navigation, and timing. The network covers an area including India and a region up to 1500 km beyond the Indian boundary. The signals are designed to provide user position accuracy better than 20 meters and timing accuracy better than 50 nanoseconds.

The system is used in terrestrial, aerial, and marine transportation, location-based services, personal mobility, resource monitoring, surveying and geodesy, scientific research, time dissemination and synchronization, and safety-of-life alert dissemination.

The NavIC system operates in the L5 band, which is a protected frequency specifically assigned to the Indian system. This dedicated frequency enhances the system's robustness and ensures minimal interference from other signals. The NVS-1 being launched on May 29 incorporates L1 band signals additionally to widen the services. It is to be noted that the GPS operates in the L1 band, which is shared with several other navigation systems worldwide.

The seven satellites in the Navic constellation include IRNSS-1A, IRNSS-1B, IRNSS-1C, IRNSS-1D, IRNSS-1E, IRNSS-1F, and IRNSS-1G satellites.

"The GSLV-F12/NVS-01 mission is designed to deploy the new navigation satellite, weighing about 2,232 kg, into a Geosynchronous Transfer Orbit. Subsequent orbit raising maneuvers will be used for taking the satellite to the intended orbit," Isro has said.

https://www.indiatoday.in/science/story/isro-navic-satellite-gslv-launch-nvs-01-sriharikota-2383063-2023-05-23

THE TIMES OF INDIA

Wed, 24 May 2023

Cyber Crooks Harvesting Data to Decrypt Later

Cyber criminals are now resorting to ‘Harvest Now Decrypt Later’ (HNDL) attacks wherein encrypted data is collected for future use.

An HNDL attack involves cybercriminals harvesting data from companies, expecting quantum computing to eventually become functional and enabling them to decrypt the acquired data. According to cyber experts, while openly available data fetches a high price on dark web, cybercriminals are now acquiring decrypted data at a lower cost, intending to harvest it later.

The rising popularity of the ‘Harvest Now Decrypt Later’ strategy among cyber fraudsters has raised concerns among experts and law enforcement agencies alike.

Pendyala Krishna Shastry, a former Central Forensic Science Laboratory expert, said that it was essential to consider the threat from HNDL attacks and implement countermeasures.

Recognising the gravity of the situation, major companies are now prioritising post-quantum cyber risk assessment and management.

As quantum computing progresses, the decryption of harvested encrypted data looms, necessitating robust security measures against this emerging threat.

A senior police official from the cyber crime wing of Telangana police said, “Within the next two to five years, we can expect the encrypted data that has been harvested to be decrypted using quantum computing.”

Furthermore, intelligence agencies actively harvest encrypted data from suspects involved in organised crime, Maoist groups and terror modules.

An official from the counter-intelligence division revealed that many terror suspects transmit and store their data in encrypted formats. Collecting and retaining this data could lead to breakthroughs in dismantling terror networks. However, the outcome hinges on the advancements in quantum computing, making it a wait-and-see approach.

https://timesofindia.indiatimes.com/city/hyderabad/cyber-crooks-harvesting-data-to-decrypt-later/articleshow/100461007.cms

ThePrint

Tue, 23 May 2023

IIT Madras Researchers Develop Demand-Responsive Signal Control to Address Traffic Jams

Researchers at the Indian Institute of Technology (IIT) Madras have developed a possible solution to traffic snarls on Indian roads through the use of a probe-based approach for real-time "re-timing" of traffic signals.According to officials, this is probably the first time a probe-based, demand-responsive signal control has been developed for Indian conditions.

The researchers conducted a study in which travel-time data from four sample-probe vehicles were used to calculate "Green" and "Red" timings for each signal cycle.

A signal cycle is the time between one 'green' signal to the next 'green' signal or one 'red' signal to the next 'red' signal for a selected movement.

"While a lot of time, effort and money have been spent on experimenting with 'off-the-shelf' traffic-responsive signalling software from abroad, these have not worked well in Indian traffic conditions, since their implementation required a number of sensors and large traffic stream data, which was not easy to collect," said Lelitha Vanajakshi, Ministry of Road Transport and Highways (MoRTH) Chair Professor at IIT Madras.

"Moreover, these software were rarely flexible for incorporating Indian traffic characteristics in their algorithms, resulting in excessive queues and delays at the intersection, in spite of large capital investments," Vanajakshi added.

The findings have been published in the International Journal of Transportation Research.

"The traffic composition in India is very different from that in the Western countries. In India, the traffic is usually referred to as belonging to the category of mixed traffic conditions, with a variety of vehicle classes juxtaposed with lane-free movement.

"Therefore, in this study, the effect of composition has been included in the algorithms, which makes it versatile for use across different cities with varying vehicle compositions," said Bhargava Rama Chilukuri, Faculty, Department of Civil Engineering, IIT Madras.

In the study, the researchers have used travel-time data — which is invariant to the vehicle class — instead of the traditional input, which is traffic flow. This makes the algorithms easy to implement with a variety of probe-based data sources such as Bluetooth, Wi-Fi, and radio frequency identification scanners.

"Another advantage is that these data sources are low-cost, efficient, and can collect travel information of large samples of vehicles for traffic-control applications. We formulated a mathematical optimization problem that uses the sample travel-time data to compute optimal 'green' and 'red' durations, such that the varying traffic demand is met, while ensuring minimal queues and delays. "This algorithm can also be extended to over-saturated intersections and optimum signal coordination across a series of intersections, which present themselves as areas of future research," Chilukuri said.

https://theprint.in/india/iit-madras-researchers-develop-demand-responsive-signal-control-to-address-traffic-jams/1590263/