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समाचार पत्रों से चयनित अंश

Newspapers Clippings

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

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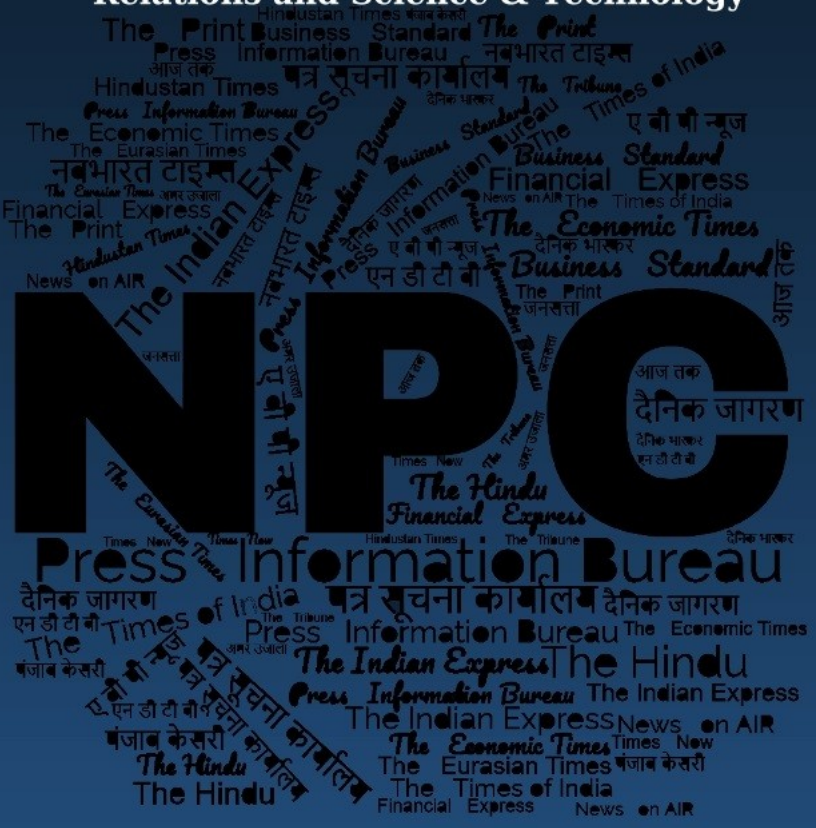

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Source: ZEE News, Dt. 10 April 2025,
URL: https://zeenews.india.com/hindi/zee-hindustan/world-news/netra-mk-ii-awacs-will-be-ready-for-trials-by-2029-drdo-indian-defence-system-radar-and-sensor/2712782

Netra Mk II AWACS: भारत लगातार अपनी डिफेंस सिस्टम को मजबूत कर रहा है. इसके लिए न केवल मिसाइलें बना रहा बल्कि एडवांस रडार सिस्टम से विमानों को लैस कर रहा है. ऐसे में भारतीय वायुसेना जल्द ही 'नेत्रा एमके 2' एयरबोर्न अर्ली वॉर्निंग सिस्टम (AWACS) से लैस होगा. जो दुश्मन की गतिविधियों को हवा से ही पकड़ने में सक्षम होगा. यह प्रोजेक्ट DRDO और एयरबस के सहयोग से किया जा रहा है, जिसमें पुराने एयर इंडिया A321 विमानों को हाईटेक सर्विलांस सिस्टम में बदला जाएगा. एयरबस फ्रांस या स्पेन में इन विमानों में रडार और सेंसर जोड़ेगा. अगर सबकुछ तय समय पर होता है, तो 2029 में इसका ट्रायल शुरू होगा और 2030 तक भारतीय वायुसेना में शामिल होने की संभावना है. यह प्रोजेक्ट भारत की रक्षा आत्मनिर्भरता की दिशा में बड़ा कदम है.

एयरबस को Netra Mk II में बदला जाएगा

इंडियन एयरफोर्स ने पुरानी एयर इंडिया की 6 Airbus A321 विमानों को नेत्रा एमके 2 AWACS प्लेटफॉर्म में बदलने का फैसला लिया है. यह प्रोजेक्ट DRDO और एयरबस की साझेदारी में तैयार होगा और भारत की स्वदेशी सैन्य क्षमताओं को और मजबूत बनाएगा. इन विमानों को रक्षा मंत्रालय के तहत लाया गया है.

IDRW की रिपोर्ट के मुताबिक Airbus इन्हें फ्रांस या स्पेन की मदद से मॉडिफाई करेगा. इसके लिए पूरी कमर्शियल इंटीरियर हटाकर भारी रडार, मिलिट्री ग्रेड अवियोनिक्स और सेंसर लगाए जाएंगे.

क्या होगी नेत्रा एमके 2 की खासियत?

नेत्रा MK2 में Gallium Nitride (GaN)-आधारित AESA रडार लगाया जाएगा, जो लंबी दूरी तक छोटे टारगेट्स को भी पकड़ सकेगा. इसमें Electronic Support Measures (ESM), Radar Warning Receiver (RWR) और Counter Measure Dispensing Systems (CMDS) भी होंगे.

इसका फ्रंट और साइड पैनल रडार मिलकर लगभग 300 डिग्री कवरेज देगा, जो पहले के 240 डिग्री से बड़ा सुधार है. यह सिस्टम हवा और समुद्र दोनों में दुश्मन की मौजूदगी को पकड़ने में सक्षम होगा.

हैवी रडार और सेंसर से होगा लैस

A321 विमान को भारी रडार और सेंसर संभालने लायक बनाया जाएगा. इसके लिए एयरफ्रेम को स्ट्रॉन्ग किया जाएगा और Auxillary Power Unit (APU) लगाया जाएगा जो पावर-हंग्री रडार को सपोर्ट करेगा. इसके साथ ही मिशन ऑपरेटर कंसोल में नॉइस कैंसलेशन, सुरक्षित संचार के लिए LOS और SATCOM लिंक, और मिलिट्री-ग्रेड इंस्ट्रूमेंटेशन शामिल होंगे. ये सभी सिस्टम इसे एक फुल-स्केल एयरबोर्न कमांड सेंटर बनाएंगे.

2029 में बनकर हो जाएगा तैयार

पहले एयरक्राफ्ट की डिलीवरी DRDO को 2027 तक हो सकती है, अगर डील 2025 तक फाइनल हो जाती है. तो उसके बाद स्वदेशी रडार और सिस्टम का इंटीग्रेशन होगा. वहीं 2029 में developmental trials शुरू हो जाएंगे.

जिसमें इसकी सभी क्षमताओं को टेस्ट किया जाएगा, जैसे कि दुश्मन के विमानों को पकड़ना, नेटवर्क से जुड़ना और युद्ध की स्थिति में काम करना. वहीं रिपोर्ट के अनुसार, 2030 तक इसे IAF में शामिल किया जा सकता है. ऐसे में यह प्रोजेक्ट सफल रहता है, तो भारत की डिफेंस सिस्टम को और मजबूती मिलेगी.

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Defence News

Defence Strategic: National/International

Armed Forces must operate jointly & remain future-ready in today's ever-evolving multi-domain environment: Raksha Mantri at DSSC, Wellington

Source: Press Information Bureau, Dt. 10 April 2025,
URL: https://pib.gov.in/PressReleasePage.aspx?PRID=2120678

"Armed Forces must operate jointly and remain future-ready in today's ever-evolving multi-domain environment where cyber, space & information warfare etc. are as potent as conventional operations," said Raksha Mantri Shri Rajnath Singh while addressing the Armed Forces officers of India and friendly countries during the Convocation Ceremony of the 80th Staff Course of Defence Services Staff College (DSSC), Wellington, Tamil Nadu on April 10, 2025.

Raksha Mantri pointed out that today's global geopolitics is being redefined by three key metrics: a major pivot towards prioritising national security, a technological tsunami sweeping the global landscape, and accelerating innovation. He urged the officers to study the nuances of these trends in-depth to stay ahead on strategic-military change curve, adding that Prime Minister Shri Narendra Modi-led Government is leaving no stone unturned to transform the Armed Forces into a technologically-advanced combat-ready force capable of multi-domain integrated operations.

Highlighting that Artificial Intelligence and other emerging technologies are revolutionising deterrence and war-fighting in critical ways, Shri Rajnath Singh termed the power of technological innovation in combat theatres as breathtaking. “In the Ukraine-Russia conflict, drones have virtually emerged as a new arm, if not a transformative science.

The majority of losses of soldiers and equipment have been attributed neither to traditional artillery nor to armour but to drones. Similarly, space capacities in the Low Earth Orbit are transforming military intelligence, persistent surveillance, positioning, targeting and communications, thus taking combat to a new high,” he said.Raksha Mantri stressed that the world is in the age of Grey Zone and Hybrid warfare where cyber-attacks, disinformation campaigns, and economic warfare have become tools that can achieve politico-military aims without a single shot being fired. He added that India faces persistent threats along its borders, which are further compounded by the challenge of proxy war and terrorism emanating from its neighbourhood.

Shri Rajnath Singh also spoke of the impact of the conflict in West Asia and the geopolitical tensions in the Indo-Pacific on the overall security calculus, in addition to non-traditional security threats such as natural disasters and climate change. He stressed on the need to vigorously pursue the transformation of the Armed Forces to remain capable and relevant for future wars, stating that PM Modi’s vision of *Viksit Bharat* by 2047 rests firmly on two foundational pillars – *Surakshit Bharat* and *Sashakt Bharat*.

Raksha Mantri pitched for the development and modernisation of the Armed Forces through self-reliance. “Lessons of the ongoing conflicts teach us that building a resilient, indigenous, and future-ready defence technological & manufacturing ecosystem is not an option, but a strategic necessity. There is a need to develop low-cost high-tech solutions and enhance the fighting capability of the Armed Forces. Our forces must not only keep pace with technological changes, but also lead it,” he said.

Shri Rajnath Singh also batted for enhanced synergy among all components to ensure national security. Fostering a ‘Whole of Nation’ approach while undertaking actions in the entire spectrum of diplomatic, informational, military, economic and technological domains is key to ensuring success in this endeavour, he said.

Referring to the Prime Minister's vision of 'MAHASAGAR' *(Mutual and Holistic Advancement for Security and Growth Across Regions)* for the Global South, Raksha Mantri stated that achieving a better future and prosperity for the nations will always remain a collective pursuit. "Increasing connectivities and dependencies among countries and people implies that the multitude of challenges are better faced together than individually. Mutual interests and synergies will help us achieve our goal at sub regional, regional and even global levels," he said.

Shri Rajnath Singh exhorted the officers to focus on five 'A's - *Awareness, Ability, Adaptability, Agility and Ambassadors* - to tackle future challenges. "As warfighters and protectors of national security, you need to remain aware of the environment and its implications. You must acquire the ability and skill set required by future leaders.

You must imbibe adaptability and agility as key virtues. The battlefield of tomorrow will require leaders who can adapt to unforeseen circumstances, leverage technology to their advantage and come out with innovative solutions. You must become Ambassadors of your respective Armed Forces. Be an ambassador of change and the perfect role model amongst the society at large," he added.

Raksha Mantri began his address by expressing solidarity and support of the people of India to Myanmar and Thailand in the wake of the recent massive earthquake. "India has always stood by its friends as a first responder in times of crisis and we consider it as our duty to be able to deliver timely relief to the people of Myanmar," he said.

The 80th Staff Course comprises 479 student officers, including 38 personnel from 26 friendly countries. Three women officers are also participating in the course.

Ahead of the ceremony, Shri Rajnath Singh laid a wreath at the Madras Regiment War Memorial and paid homage to the bravehearts. He also interacted with the veterans, acknowledging their invaluable contributions to the nation. Chief of Defence Staff General Anil Chauhan was among the dignitaries present on the occasion.

Established in 1948, DSSC is a premier Tri-service training institution that imparts professional education to select middle-level officers of the Indian Armed Forces and friendly countries. It aims to enhance their professional competencies for assuming higher responsibilities. Over the years, more than 19,000 Indian officers and 2,000 international officers have graduated from DSSC, many of whom have risen to become heads of states and military forces worldwide.

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India, Pak armies discuss issues related to LoC management

Source: The Economic Times, Dt. 11 April 2025,
URL: https://economictimes.indiatimes.com/news/defence/india-pak-armies-discuss-issues-related-to-loc-management/articleshow/120174528.cms

Indian and Pakistani armies convened a brigade commander-level flag meeting at Chakan Da Bagh in Poonch to address border management concerns. Brigadier-level officers from both sides participated in the discussion, marking the second meeting this month. The Indian Army raised concerns about infiltration attempts, ceasefire violations, and IED blasts, lodging a formal protest with their counterparts.

The armies of India and Pakistan on Thursday held a brigade commander-level flag meeting along the Line of Control (LoC) in Poonch district of Jammu and Kashmir to discuss issues related to border management. Officials said the meeting was held at Chakan Da Bagh of Poonch led by brigadier-level officers from both the countries. This is the second such meeting between the two sides this month.

"The flag meetings are a routine LoC and border management process in accordance with DGMO's understanding between both sides," a defence spokesperson informed. The officials stated that the meeting was conducted to discuss routine issues along the LoC. The officials also said that the Indian Army also raised the issue of infiltration attempts, ceasefire violations and IED blasts with their counterparts and lodged a protest with them.

Earlier, on 2nd April, a 75-minute brigade commander-level flag meeting was held, with both sides emphasizing border peace. On 1st April, Pakistani troops violated the ceasefire with unprovoked firing after a mine exploded along the LoC in the Poonch district.

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BSF to undertake mega IED detection drive along India-Pakistan border in Punjab

Source: The Economic Times, Dt. 11 April 2025,
URL: https://economictimes.indiatimes.com/news/defence/bsf-to-undertake-mega-ied-detection-drive-along-india-pakistan-border-in-punjab/articleshow/120163499.cms

Following the unprecedented discovery of IEDs along the Punjab border, which injured a BSF jawan, the Border Security Force will conduct extensive anti-IED sweeps across hundreds of kilometers. This action comes alongside the jurisdictional shift of 20.3 kilometers to the Jammu frontier for enhanced security coordination in riverine areas near Pathankot.

The BSF will undertake an anti-IED sweep along hundreds of kilometres of the India-Pakistan border in Punjab following the first-time recovery of such bombs leading to one jawan being injured, official sources said on Thursday. The force also recently shifted the jurisdiction of about 20.3 kilometres from the total 553 kilometres under its Punjab frontier, headquartered in Jalandhar, to the neighbouring Jammu frontier for "better security coordination" in the riverine areas that run along Pathankot in Punjab.

The 2,289-kilometre-long India-Pakistan international border runs from Jammu in the north to Punjab, Rajasthan and Gujarat in the west and the Border Security Force (BSF) is tasked with guarding it.
Its Jammu frontier guards 191.66 kilometres of the international border, apart from 40 kilometres of the Line of Control (LoC) along Jammu and Kashmir.

"A massive sanitation drive to find possible improvised explosive devices (IED) will be undertaken in the Punjab frontier following the incident on Wednesday where two such bombs were recovered from a farming field ahead of the fence in Gurdaspur district. Anti-sabotage checks are already being undertaken at the site where the IED was detected," a senior officer told PTI.

Officials had said this was the first time that an IED was recovered at this strategic and sensitive border, prone to drugs- and weapons-carrying Pakistani drones and infiltration by terrorists. About 70 per cent of the 532 kilometres of the international border in Punjab is cultivable and visited by farmers for tilling of the land, according to the officials.

A major portion of this fertile land is ahead of the fence and, hence, the BSF will have to ensure that there are no IEDs hidden there that may hurt troops or farmers or local civilians who frequent these areas, they said.

There is a strong suspicion the IED was placed by elements from across the border as the area where it was found was ahead of the fence and that its assembly was of a "military precision", according to the officials. The BSF is expected to raise the issue with the Pakistan Rangers in the coming days.

The force will soon bring additional ground detection equipment and sniffer dogs to undertake the anti-IED sanitisation drive, the officials said.

BSF officials in Punjab said the IED detection on Wednesday had opened a new front for security

agencies alongside the continuing menace of Chinese-made Pakistani drones entering into India to mostly drop narcotics, and sometimes small arms and ammunition.

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The latest in Indian defence? ISRO to build military satellites for surveillance and intelligence

Source: The Week, Dt. 10 April 2025,
URL: https://www.theweek.in/news/defence/2025/04/10/the-latest-in-indian-defence-isro-to-build-military-satellites-for-surveillance-and-intelligence.html

India has taken a big step toward this future, as Chief of Defence Staff General Anil Chauhan announced plans to launch several satellites for intelligence and surveillance during the Indian DefSpace Symposium in Delhi. These satellites will be built by the Indian Space Research Organisation (ISRO) and will boost the military's ability to watch and listen from space.

A military space doctrine will also be ready in three months, guiding how these tools will be used. With India's long borders and strategic needs, this move shows how seriously the nation is taking space as a new frontier for defence.

In the backdrop of this development and with India planning to launch dedicated satellites for intelligence and surveillance their significance is of utmost importance. These satellites play two key roles watching over vast areas (surveillance) and gathering secret information (intelligence). Together, they give the military a powerful advantage in today's fast-moving world.

Military satellites are also important because they provide information that ground-based systems cannot match. Positioned high above the Earth, they can see and listen across huge distances, beyond borders, and in places where it's hard or dangerous to send people. Unlike planes or drones, satellites do not need to refuel or land and they keep working around the clock. This constant presence makes them essential for staying ahead of threats.

Experts point out that surveillance is all about watching and monitoring. "Military satellites designed for this job carry advanced cameras and sensors that can take detailed pictures of the ground, even from hundreds of kilometres away. They can see through clouds, work at night, and zoom in on tiny details like a vehicle's license plate or a ship's markings. This makes them perfect for keeping an eye on borders, coastlines, or disputed areas.

For instance, if an enemy is moving troops or building something suspicious, a surveillance satellite can spot it early. This early warning gives the military time to plan and respond," explained space expert Girish Linganna.

Military satellites can also track weather patterns or disasters, like floods, which might affect security. With their wide reach, a single satellite can cover thousands of kilometres, ensuring nothing slips through unnoticed.

On the other hand, they help in intelligence, which is about finding out what others don't want you to know. Satellites built for this purpose do not just look they listen. They pick up radio signals, phone calls, or electronic messages from the ground, air, or sea. This "signal intelligence" helps the military understand what an enemy is planning or where they're moving.

For instance, if a rival nation is testing a new weapon, an intelligence satellite might catch those signals, stopping a threat before it starts. These satellites can also track ships or missile launches by detecting radar or heat signatures. By combining this with surveillance data, the military gets a fuller picture, making it sharper and faster in response.

"Military satellites are a force multiplier. They make a country's defences stronger without needing more soldiers or bases. For surveillance, they provide unmatched coverage and speed. For intelligence, they offer insights that can prevent or win wars," added Linganna.

In India's context, with its unique geography and security challenges, these satellites can protect against threats on land, at sea, or even in space. They turn the vastness of space into an advantage, ensuring no move goes unseen and no plan stays hidden. Investing in these orbiting guardians is a smart step toward a safer, stronger future.

The project also reflects the growing synergy between India's public and private sectors in space technology. ISRO will launch a portion of the satellites while leading private firms such as Larsen & Toubro and Tata Advanced Systems will manufacture the rest.

This collaboration is part of the government's broader push to liberalize the space sector and tap into the dynamism of India's booming private space-tech ecosystem. Indian startups like Pixxel have already demonstrated remarkable capability, providing hyperspectral imagery to defence agencies. Indian industry has also delivered advanced technologies such as jammers, tracking

radars, and secure communication systems. As noted by Indian Space Association Chairman Jayant Patil, this public-private collaboration is key to scaling innovation and accelerating deployment timelines.

“Many of the satellites will be equipped with synthetic aperture radar (SAR), enabling them to penetrate cloud cover and darkness, making them capable of detecting underground bunkers, hidden artillery positions, and even adversarial submarines beneath the ocean surface.

With persistent surveillance along contested frontiers and in maritime choke points, India’s forces will gain unprecedented situational awareness across diverse terrains and operational theatres,” remarked Srimathy Kesan, founder and CEO of Space Kidz India.

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China racing to outpace US with nuclear, conventional, cyber, space capabilities, warn top Pentagon officials

Source: The Week, Dt. 10 April 2025,
URL: https://www.theweek.in/news/defence/2025/04/10/china-racing-to-outpace-us-with-nuclear-conventional-cyber-space-capabilities-warn-top-pentagon-officials.html

China is rapidly modernising its military to surpass the US, expanding in missiles, space, and AI, posing a serious Indo-Pacific threat.

China is developing a large and advanced arsenal of nuclear, conventional, cyber and space capabilities in a bid to dominate the Indo-Pacific region and displace the US as the world's most powerful nation, John Noh, performing the duties of assistant secretary of defence for Indo-Pacific security affairs, said while testifying before the House Armed Services Committee hearing.

The military modernisation of China, which encompasses advancements in the field of artificial intelligence in the form of hypersonic missiles, and space-based capabilities among others, poses a real and serious threat to the US, its allies and partners, said Navy Adm. Samuel Paparo, commander of US Indo-Pacific Command.

According to Noh, the US needs to establish deterrence in the Indo-Pacific region with combat-credible military forces to counter the Chinese threat and aggression.

China has been increasing its aggressive military posturing in the Indo- Pacific region. The US has naval bases and military presence in the region and has been expanding its alliance there.

Noh said the US must rebalance burden sharing with allies in the region and partners and invest in the US defense industrial base. "Stronger allies lead to stronger alliances, and stronger alliances deter aggression and create dilemmas for our adversaries."

Noh observed that Chinese President Xi Jinping ordered the People's Liberation Army (PLA) to be ready for invading Taiwan by 2027.

Speaking about the frequent military drills by the PLA near Taiwan, Paparo claimed that China's aggressive military actions near Taiwan are not just exercises, but are rehearsals.

He too echoed the observations of Noh as he said China is outproducing the US in air, maritime and missile capability while also accelerating its space and counter-space capabilities. This, according to Paparo, poses real and serious challenges to US military superiority, but also presents opportunities for reform and for establishing enduring advantage.

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HAL slams reports with "malicious intentions" after Advanced Light Helicopter crash in Gujarat

Source: ANI News, Dt. 11 April 2025,
URL: https://www.aninews.in/news/national/general-news/hal-slams-reports-with-malicious-intentions-after-advanced-light-helicopter-crash-in-gujarat20250411121521/

Defence PSU Hindustan Aeronautics Ltd has said that speculative stories with malicious intentions have been written and published on various media platforms ever since the accident of the Advanced Light Helicopter (ALH) operated by the Indian Coast Guard crashed in January.

"HAL would like to bring to the notice of all its stakeholders, media and all forms of publications--online, print, websites, blogs, social and digital media platforms, etc. that of late, ever since the unfortunate accident of ALH operated by the Indian Coast Guard in January, speculative stories with malicious intentions on HAL are being written and published on these platforms," HAL said in a statement.

"These stories are authored by so-called Defence analysts, former pilots, officers of the Defence Forces and arm-chair critics," it added. The company said that these stories are written without

offering HAL's perspective, and arguments are one-sided and biased. There are inaccuracies and references to outdated issues that HAL has long resolved by taking its customers into confidence. HAL said that it cannot respond to or comment on all these reports one-on-one due to the sensitive nature of Defence issues and products.

"HAL would like to reiterate that it is working with all its customers, including the Indian Air Force, and is confident of handling the critical issues that are innate to the Defence Aeronautics and complex flying platforms," the company said. "These stories can harm the interests of HAL's stakeholders and therefore this statement is being filed to protect the interests of all our stakeholders from being influenced by unwarranted and speculative stories," it added.

A Board of Inquiry was launched after an Indian Coast Guard (ICG) Advanced Light Helicopter (ALH) Dhruv crashed in Gujarat's Porbandar, resulting in the deaths of three crew members, including two pilots and one aircrew member. According to officials, the incident occurred when the ICG ALH MK-III helicopter, on a routine training sortie, crashed while landing at Porbandar airport.

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Rajnath Singh to attend Russia's Victory Day parade on May 9; PM Modi's visit unlikely: Report

Source: Mint, Dt. 10 April 2025,
URL: https://www.livemint.com/news/india/rajnath-singh-to-attend-russia-s-victory-day-parade-on-may-9-pm-modis-visit-unlikely-report-11744257761587.html

Defence Minister Rajnath Singh will likely represent India at Russia's Victory Day parade on May 9, marking the 80th anniversary of the victory over Germany in World War II.

Prime Minister *Narendra Modi*, who was invited by Russia, is unlikely to travel to Russia, according to news agency *ANI.*Last year in December, Rajnath Singh visited Russia for the

Commissioning Ceremony of INS Tushil in the country's Kaliningrad. Singh also paid tributes at 'The Tomb of the Unknown Soldier' in Moscow to honour the Soviet soldiers killed during the Second World War and interacted with members of the Indian community.

Earlier, Deputy Foreign Minister of Russia Andrey Rudenko was quoted by the state-run Tass news agency as saying that Moscow expects PM Modi at the May 9 parade. The invitation has already been sent, and the visit is being worked out, Rudenko said.

In New Delhi, Ministry of External Affairs Spokesperson Randhir JaiswalRajnath Singh to attend Russia's Victory Day parade on May 9; PM Modi's visit unlikely: Report said the Prime Minister was invited and "we will be announcing our participation in Victory Day celebrations at the appropriate time".

In july last, Prime Minister Modi visited Moscow to attend the 22nd Russia – India summit, his first trip to the country in nearly five years. He had visited the far eastern city of Vladivostok in 2019to attend an economic conclave. In October last, Modi visited the Russian city of Kazan for the BRICS summit. During his last visit, Modi invited Russian President Vladimir Putin to visit India.

Putin has already accepted Modi's invitation to visit India. He is expected to travel to India this year as part of the established framework for reciprocal annual engagements between the two nations' leaders. However, the dates of Putin's visit have not been revealed yet.

Russia has invited leaders of several friendly nations to attend this year's Victory Day parade. Former prime minister Manmohan Singh attended the Russian Victory Day parade in 2005. The parade marked the 60th anniversary of the defeat of Nazi Germany in 1945.

In January 1945, the Soviet Army launched an offensive against Germany. The commanders-in-chief on May 9 signed the Act of Unconditional Surrender of Germany which ended the war.

In his congratulatory message to President Droupadi Murmu and Prime Minister Modi on the occasion of India's 76th Republic Day in January, Putin said that Russian-Indian relations are based on "special and privileged strategic partnership".Putin and Modi maintain regular contact, holding telephone conversations once every couple of months. The two leaders also hold in-person meetings, particularly on the sidelines of international events.

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Indian-Made Component Found In Russian Weaponry: A Shifting Landscape of Military Supply Chains

Source: Indian Defence News, Dt. 11 April 2025,
URL: https://www.indiandefensenews.in/2025/04/indian-made-component-found-in-russian.html

In a significant development documented in early April 2025, Ukraine's military intelligence agency (HUR) has reported the first-ever discovery of an Indian-manufactured component in Russian weapon systems used in the ongoing Ukraine conflict. The component, identified as a clock buffer produced by Bengaluru-based Aura Semiconductor, represents a notable evolution in Russia's efforts to circumvent Western sanctions by diversifying its military supply chains.

This discovery comes amid a broader investigation that uncovered nearly 200 new parts across six types of Russian weapons, revealing Moscow's strategic pivot away from American technology and towards alternative sources from countries not participating in the sanctions regime.

Discovery Details And Intelligence Findings

Ukraine's Defence Intelligence agency announced on April 7, 2025, through a Telegram post, that they had identified an Indian-made clock buffer from Aura Semiconductor in Russian weaponry for the first time. This discovery came as part of HUR's ongoing efforts to document foreign components in Russian military hardware, which has now uncovered approximately 200 new parts used across six different Russian weapon systems. The intelligence report specifically highlighted examinations of the CRP antenna in the Russian-modified Shahed drone (known as Geran-2 in Russia), the North Korean KN-24 ballistic missile, the onboard computer of the Kh-47 Kinzhal hypersonic missile, and several reconnaissance and attack drones including the Supercam S350, Gerbera, and Zala. These weapon systems have been extensively deployed against Ukrainian targets, including civilian infrastructure, energy facilities, and military positions throughout the conflict.

The clock buffer component, a critical electronic element used to manage timing signals in complex systems, points to the intricate and often opaque nature of global supply chains. Aura Semiconductor, headquartered in Bengaluru, is known for designing high-performance analogue and mixed-signal chips for applications ranging from telecommunications to aerospace. While there is no evidence suggesting direct involvement by either the company or the Indian government in supplying Russia, the finding underscores how dual-use technologies can inadvertently end up in military hardware through third-party channels and circumvention of export controls.

The clock buffer discovered in Russian weaponry plays a crucial role in synchronizing electronic signals within complex systems. In military applications, such components enhance the performance of precision-dependent weapons, particularly those requiring high-speed data processing. These specialized electronic parts are commonly integrated into guidance and

navigation systems, drones, electronic warfare platforms, and radar and surveillance systems—all critical to modern warfare capabilities. The integration of this Indian component represents not only a technical adaptation but also highlights Russia's determination to maintain its military-industrial complex despite international isolation.

Russia's Strategic Shift In Component Sourcing

The presence of an Indian-made component in Russian weaponry reflects Moscow's broader strategy to adapt to Western sanctions imposed following its invasion of Ukraine in February 2022. Intelligence reports indicate that Russia has almost completely eliminated American components from its newer weapon systems.

For instance, the latest CRP antennas for the Geran-2 drone contained only two American-made chips, compared to previous versions that relied heavily on U.S. electronics. This dramatic reduction demonstrates Russia's deliberate effort to reduce vulnerability to sanctions and secure more reliable supply chains.

In place of American components, Russian weapons now predominantly feature Chinese-made parts. Earlier examinations of jamming-resistant antennas with Chinese-language markings found in Russian Shahed drones revealed that 13 out of 15 components were manufactured by Chinese firms, including key signal-processing chips from the Beijing Microelectronics Technology Institute. Transceivers, signal converters, and other microchips of Chinese origin have become standard in these systems, with the main chip of the CRP antenna—which analyses incoming signals and determines which to ignore—being made by Beijing Microelectronics Technology Institute. The Indian clock buffer, alongside two other unidentified components suspected to be of Chinese origin, suggests Moscow is casting an increasingly wide net to sustain its weapons production.

Production Capabilities And Adaptation

Russia has not only diversified its component sourcing but has also increased its domestic production capabilities. Reports indicate that a Russian plant producing Shahed drones in the special economic zone of Alabuga (Tatarstan) doubled its output from January to September 2024 compared to the same period in 2023. The serial numbers on the bodies of downed Shahed drones have reportedly reached 12,000, indicating substantial production volumes. Ukrainian President Volodymyr Zelenskyy has noted that drones used by Russia in its attacks on Ukraine on January 5 of this year contained 8,755 foreign-made components, highlighting the continued dependence on international supply chains despite sanctions.

Geopolitical Implications

The discovery of an Indian component in Russian weaponry introduces new complexities to the geopolitical landscape surrounding the Ukraine conflict. India has historically maintained a delicate balance in its foreign policy, serving as a long-standing partner of Russia in defence and trade while simultaneously deepening ties with Western nations in recent years. Russia has been India's top arms supplier for years, although international sanctions have forced India to diversify its defence procurement and strengthen relationships with Western arms producers.

While India has publicly urged a diplomatic resolution to Russia's war in Ukraine, it has also continued expanding trade with Moscow. The presence of an Indian component in Russian weaponry could potentially complicate this balancing act, even if its inclusion was unintentional. For Ukraine, the finding is part of a broader effort to document and expose the foreign components fuelling Russia's military operations, with the aim of pressuring sanctioning nations to tighten export controls and disrupt Moscow's supply lines.

China remains Russia's strongest economic and military partner, with both countries conducting joint military drills alongside allies like Belarus and Iran. Beijing has emerged as one of Russia's leading sources of dual-use goods that feed the Russian defence industry, a relationship that has strengthened as Western sanctions have intensified.

Conclusion

The identification of an Indian-made clock buffer in Russian weaponry marks a significant milestone in the evolving landscape of military supply chains amidst the Ukraine conflict. This discovery illustrates Russia's determined efforts to circumvent Western sanctions by diversifying component sourcing and reducing dependence on American technology. The shift toward Chinese and now Indian components demonstrates the challenges of controlling the flow of dual-use technology in a globalized economy, where components designed for civilian purposes can find their way into military applications through complex and often opaque channels.

For Ukraine and its Western allies, this development underscores the need for more comprehensive export control measures and greater international cooperation to prevent the circumvention of sanctions. For India, it presents potential diplomatic challenges as it continues to balance its relationships with Russia and Western nations.

As the conflict continues, the technological adaptations and supply chain reconfigurations by Russia will likely remain a critical factor in the broader geopolitical dynamics surrounding theUkraine war, highlighting the increasingly interconnected nature of global security challenges in the 21st century.

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Chenab rail bridge opens a new era of development in J&K: Railways

Source: The Print, Dt. 10 April 2025,
URL: https://theprint.in/india/chenab-rail-bridge-opens-a-new-era-of-development-in-jk-railways/2584066/

The iconic Chenab rail bridge doesn't just connect two mountains but dreams, development, and a new era for Jammu and Kashmir, the Railway Ministry said on Wednesday ahead of its official opening by Prime Minister Narendra Modi on April 19. Modi will flag off Vande Bharat train from Jammu to Srinagar via Katra to mark the completion of the 272-kilometre Udhampur-Srinagar-Baramulla rail link.

"Built in the geologically complex and unstable terrain of the Himalayas, the Chenab Bridge is more than a feat of infrastructure — it is a symbol of India's grit, innovation, and unwavering resolve to bring progress to even the most remote corners," Dilip Kumar, Executive Director, Information and Publicity, Railway Board, said.

"As it stands tall over the Chenab, the bridge doesn't just connect two mountains – it connects dreams, development, and a new era for Jammu & Kashmir," the release said.

The Railway Ministry said that stretching 1,315 metres across the Chenab River near the Salal Dam, the bridge features a main arch span of 467 metres, and can withstand wind speeds up to 266 kmph. According to the ministry, the bridge surpasses the Eiffel Tower in height and is nearly five times taller than the Qutub Minar from riverbed to rail level.

"The construction of this engineering marvel involved over 28,000 metric tonnes of steel and introduced a first-of-its-kind cable crane system in Indian Railways — used to ferry materials across a 915-metre-wide gorge with two massive cable cars and pylons towering over 100 metres high," Kumar said.

The bridge is a part of the Udhampur-Srinagar-Baramulla Rail Link (USBRL) project and it connects "not just terrain but aspirations — linking the Kashmir Valley to the rest of India with an all-weather, reliable rail route." The ministry claimed that its the "world's highest railway bridge" at 359 metres above the riverbed.

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From "great achievement" to "milestone": Legal, foreign policy experts laud government over 26/11 accused Tahawwur Rana's extradition

Source: The Tribune, Dt. 10 April 2025,
URL: https://www.tribuneindia.com/news/world/from-great-achievement-to-milestone-legal-foreign-policy-experts-laud-government-over-26-11-accused-tahawwur-ranas-extradition/

Foreign and legal experts have hailed the extradition of Tahawwur Rana, the mastermind of the deadly 26/11 Mumbai terror attacks, to India as a "milestone" in the country's fight against terrorism.

Foreign Affairs expert Robinder Sachdev said the government has worked "tirelessly and silently" for the extradition of Tahawwur Rana.

While speaking with ANI, Sachdev said, "There is no doubt, extradition of Tahawwur Rana to India is a milestone in our global fight against terrorism. It is absolutely the win and result of our consistent diplomatic engagement, legal engagement and perseverance. Our government has worked tirelessly and silently..."

Calling Rana's extradition a "victory of law," foreign affairs expert Sushant Sareen told ANI, " The government should get the credit for this... this govt showed a commitment to this...we will never forget or spare (accused)..."

Former Attorney General Mukul Rohatgi called the extradition a "great achievement" of the Indian government.

"It is a great achievement of this government and it shows the efforts led by the Prime Minister, Union Home Minister and the External Affairs Minister, the credit goes to them that a person so evil and such a dreaded terrorist who is responsible for the killings of scores of people and creating mayhem in Mumbai, a conspirator with David Headley has been brought swiftly to India...It's only the last two years that the court finally in America approved the extradition...This shows the diplomatic channels working feverishly between the government of India and the US...I am sure that he will get appropriate punishment for his sins," Rohatgi told ANI.

International Council of Jurists President, Senior Advocate Dr Adish C Aggarwala also asserted that US President Donald Trump is against terrorism.

While speaking with the reporters, Aggarwala said, "Trump government took special interest and allowed Tahawwur Rana's extradition to India... Donald Trump himself making a statement on this as soon as his government came into power shows that he is against terrorism..."

On Thursday, Rana arrived in India following his extradition by the United States.

Senior Advocate Dayan Krishnan and Special Public Prosecutor Narender Mann, who are leading the National Investigation Agency (NIA) prosecution, were seen arriving at Patiala House Court in the national capital ahead of Rana's appearance before the court.

Ahead of Rana's court appearance, Delhi Police swiftly cleared the court complex. Authorities vacated the premises entirely and instructed media personnel to leave, citing security and safety concerns. No individuals were allowed inside the complex as part of heightened security measures surrounding the event. The decision to restrict access was made to ensure the safety of all involved.

The NIA said today that it has successfully secured the extradition of Rana, the mastermind of the deadly 26/11 Mumbai terror attacks, after years of sustained and concerted efforts to bring the key conspirator behind the 2008 mayhem to justice.

According to the NIA, Rana was being held in judicial custody in the US pursuant to proceedings initiated under the India-US Extradition Treaty. The extradition finally came through after Rana exhausted all legal avenues to stay the move.

The District Court for the Central District of California had ordered his extradition on 16th May 2023. Rana then filed multiple litigations in the Ninth Circuit Court of Appeals, all of which were rejected. He subsequently filed a petition for a writ of certiorari, two habeas petitions, and an emergency application before the US Supreme Court, which were also denied.

The extradition proceedings were initiated between the two countries after India eventually secured a surrender warrant for the wanted terrorist from the US government.

"Rana is accused of conspiring with David Coleman Headley @ Daood Gilani, and operatives of designated terrorist organisations Lashkar-e-Taiba (LeT) and Harkat-ul-Jihadi Islami (HUJI) along with other Pakistan-based co-conspirators, to carry out the devastating terror attacks in Mumbai in 2008.

A total of 166 persons were killed and over 238 injured in the deadly attacks. Both LeT and HUJI have been declared as terrorist organisations by the Government of India under the Unlawful Activities (Prevention) Act, 1967," the NIA said.

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JK Lieutenant Governor dismisses 2 government employees for anti-national activities

Source: The Tribune, Dt. 10 April 2025,
URL: https://www.hindustantimes.com/cities/chandigarh-news/jk-lieutenant-governor-dismisses-2-government-employees-for-anti-national-activities-101744313456277.html

The lieutenant governor of Jammu and Kashmir, Manoj Sinha, on Thursday dismissed two government employees—one from the police department and the other from the public works department (PWD)—for their alleged involvement in anti-national activities.

The action was taken under Article 311 of the Constitution of India, which empowers the government to dismiss employees without departmental inquiry in the interest of the security of the state.

The two dismissed employees have been identified as Basharat Ahmad Mir, assistant wireless operator in the police department, resident of Upper Brein, Srinagar, and Ishtiyak Ahmed Malik, senior assistant in the PWD, resident of Shitroo Larnoo, Anantnag.

According to officials, law enforcement and intelligence agencies had flagged their adverse activities, establishing deep involvement in activities prejudicial to the interests of the state, including terror-related activities.

With these dismissals, the number of government employees sacked since the revocation of Article 370 in 2019 for their involvement in terrorism, narco trade and anti-national activities has reached nearly 80.

Basharat Ahmad Mir was reportedly under close surveillance of intelligence agencies, who had credible inputs indicating his continuous contact with Pakistan Intelligence Operatives (PIOs). He was found to be sharing sensitive information about security installations and deployments with hostile elements.

Ishtiyak Ahmed Malik, on the other hand, was listed as an active member of the proscribed organization Jamaat-e-Islami Jammu and Kashmir (JeI-JK) and an associate of the banned terror outfit Hizbul Mujahideen.

Officials said Malik played a key role in supporting and facilitating terrorist activities, including providing food, shelter and logistics to militants.

He also allegedly shared critical intelligence regarding the movement of security forces and aiding militants in evading capture and launching counterattacks, which at times led to casualties among security personnel.

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Jaishankar participates in Asia Business Council Spring Forum, highlights changes underway in international system

Source: The Tribune, Dt. 10 April 2025,
URL: https://www.tribuneindia.com/news/world/jaishankar-participates-in-asia-business-council-spring-forum-highlights-changes-underway-in-international-system/

External Affairs Minister S Jaishankar participated in the Asia Business Council Spring Forum 2025 on Thursday. He spoke about the profound changes being made in the international system, the implications for Global South and India's role in furthering its voice.

In a post on X, Jaishankar stated, "An engaging conversation today at the Asia Business Council Spring Forum 2025. Spoke about the profound changes underway in the international system, the implications for Global South and India's role in furthering its voice."

Earlier in March, Jaishankar emphasised the need to build reliable and resilient supply chains, as the world is passing through an uncertain and volatile period.

In his address at the 10th CII India-LAC Business Conclave, Jaishankar said, "We are passing through an uncertain and volatile period... We are all developing countries and, therefore, among those most impacted by the long-term consequences of the COVID pandemic."

"On top of that, the implications of the Ukraine conflict for food, fuel and fertiliser security have been additional stress points... The cost of borrowing, particularly for developing countries, has been exorbitant. This challenging backdrop is the reality that we must recognise as we explore new forms of cooperation...

There is a need to de-risk the global economy from the dangers of over-concentration in any single geography. But we also need to build reliable and resilient supply chains," he said.

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Jaishankar added that India's collaboration with Latin America and the Caribbean must address the needs of health security. The Union Minister said that facilitating technology flows, harmonising regulations, recognising pharmacopoeia, and promoting mobility of talent are among the possibilities that should be encouraged.

"Now, both COVID and conflict have brought home to us the importance of food security... Latin America and the Caribbean have the ability to serve as a breadbasket, not just for themselves but for the entire world. To realise their full potential, there is a need for better technology, greater productivity, logistics, post-harvest storage, and more food processing... The quest for energy security ranks only next to health and food security," he added.

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India Clears Rs 63,000 Crore Deal For 26 Rafale Marine Fighter Jets

Source: Swarajya, Dt. 10 April 2025,
URL: https://swarajyamag.com/news-brief/india-clears-rs-63000-crore-deal-for-26-rafale-marine-fighter-jets

In a landmark decision, the Cabinet Committee on Security (CCS) on Tuesday (8 April) approved India's largest-ever fighter jet acquisition, greenlighting the purchase of 26 Rafale Marine combat aircraft from France for the Indian Navy.

The deal, valued at over Rs 63,000 crore, will be executed via a government-to-government agreement, according to government sources cited by *ANI*.

The contract includes 22 single-seater and four twin-seater Rafale Marine jets, alongside an extensive package covering fleet maintenance, logistical support, personnel training, and indigenous manufacturing components under offset obligations. Deliveries are expected to commence roughly five years after the signing of the agreement.

These 4.5 generation carrier-borne fighter jets are set to be deployed on INS Vikrant, India’s first indigenously-built aircraft carrier, significantly enhancing naval airpower. They will operate alongside the existing MiG-29K fleet, which will continue flying from INS Vikramaditya.The Indian Air Force (IAF) already maintains 36 Rafale jets across its Ambala and Hashimara bases.

The Marine variant will further strengthen the Indian Armed Forces' operational capabilities.

The deal is expected to include upgrades to the "buddy-buddy" aerial refuelling system, allowing approximately 10 Rafale jets to refuel others mid-air, thereby extending their range and endurance.

The deal may also include ground-based equipment and software enhancements for the existing IAF fleet.

The Indian Navy will be required to equip its carriers with specialised hardware to support Rafale M operations.

Meanwhile, the Navy's long-term vision includes inducting indigenous fifth-generation fighter jets, currently under development by the Defence Research and Development Organisation (DRDO).

This twin-engine deck-based fighter is expected to be the naval counterpart of the Advanced Medium Combat Aircraft (AMCA) designed for the Air Force.

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Science & Technology News

Sunbird, a nuclear fusion powered rocket could help reach Pluto in just 4 years: Report

Source: The Indian Express, Dt. 10 April 2025,

URL: https://indianexpress.com/article/technology/science/sunbird-nuclear-fusion-rocket-mars-time-half-pluto-4-years-9936341/

Elon Musk's SpaceX wants to push the boundaries of space exploration, but a British startup named Pulsar Fusion is working on an ambitious nuclear fusion powered rocket called Sunbird.

The world's brightest minds have been trying their hands on nuclear fusion technology for decades now, but despite several attempts and breakthroughs, haven't been able to replicate the inner workings of stars anywhere on Earth.

In a statement to CNN, Richard Dinan, the CEO and founder of Pulsar Fusion said that "it's very unnatural to do fusion on Earth. Fusion doesn't want to work in an atmosphere, Space is a far more logical, sensible place to do fusion, because that's where it wants to happen anyway."

And while Sunbird is still in early stages of construction and has numerous challenges ahead, Pulsar Fusion says it has planned an orbital demonstration for 2027.

Also, the nuclear fusion powered rocket could help spacecrafts reach speeds of up to 805,000 kms per hour, which is much faster than the Parker Solar Probe, the fastest object ever built that peaks out at 692,000 kms per hour.

If the nuclear fusion powered rocket becomes operational, it would cut the time required to reach Mars by half and reach Pluto in just four years.

Unlike traditional chemical rockets like Starship, Sunbird won't be operating independently but will attach to larger spacecraft to help them cover interplanetary distances. "We launch them into space, and we would have a charging station where they could sit and then meet your ship. Ideally, you'd have a station somewhere near Mars, and you'd have a station in low Earth orbit, and the (Sunbirds) would go back and forth", Dinan told CNN.

He went on to say that the first Sunbird(s) will be used to shuttle satellites in orbit, but they can also be used to deliver heavy payloads (up to 2,000 kgs) to Mars in just six months.

However, there are several significant technical challenges in making nuclear fusion powered rockets a reality. Since these systems are large and heavy, companies like Sunbird may have a hard time making lightweight and miniaturising them.

Like Pulsar Fusion, companies like Helicity Space and General Atomics, which are backed by Lockheed Martin and NASA are also working on nuclear fusion reactors, which they plan to testsometime in 2027.

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Hubble measures Uranus's rotation with record precision

Source: The Indian Express, Dt. 10 April 2025,
URL: https://www.news9live.com/science/hubble-measures-uranuss-rotation-with-record-precision-2838354

Astronomers made an important breakthrough when they measured Uranus's rotation rate with exceptional precision through NASA/ESA Hubble Space Telescope data compiled for twelve years. *

Scientists led by Laurent Lamy at Observatoire de Paris-PSL deployed an innovative auroral observation method which helped their international team establ*ish that Uranus rotates in 17 hours, 14 minutes, and 52 seconds. The latest estimate determined Uranus requires 28 seconds more to spin once than NASA detected during Voyager 2's flyby in 1986.

This discovery not only improves our knowledge of Uranus but also finally explains the perplexing observations which complicated scientific observations for decades. Previous measurements in tracking Uranus's magnetic poles created unreliable inconsistencies which made extended studies difficult to follow. The measurement provides scientists with their most precise rotation period determination about Uranus, which enables them to create a reliable coordinate system after 40 years.

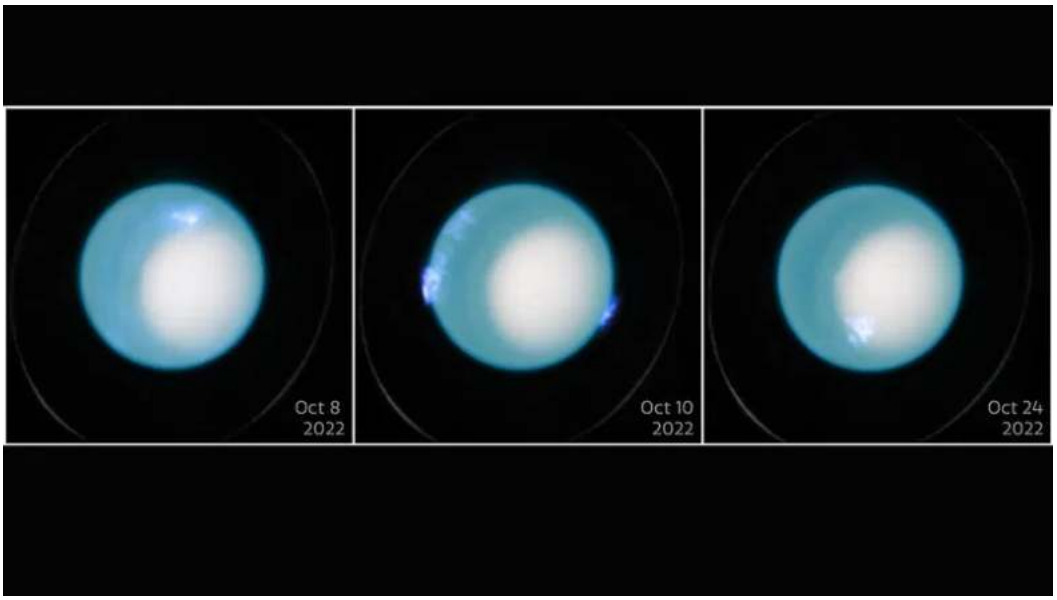
Planetary spin measurement through surface features and magnetic fields encounters difficulties when studying Uranus. Uranus exhibits an anomalous magnetic field that operates at a large angle to its axis while also sitting off-centre to its rotation axis, resulting in complex tracking procedures. The team monitored ultraviolet light from Uranus' aurorae to track natural light, which shows energetic particles generated through magnetic field interactions.

The data obtained through multiple Hubble observation programmes created opportunities for scientists to recognise recurring patterns in auroral occurrences. The repeated signals from Uranus enabled scientists to identify its native spin rhythm, as they would need this information for future exploration and research.

This discovery extends its influence far past number determination. The magnetic structure of Uranus produces an exceptional magnetosphere, which causes its auroral activity to behave in an unpredictable manner.

The extensive observational period using Hubble enabled scientists to develop advanced magnetic field models which match the discovered rotation speed of the planet, thus enabling critical research about internal planetary processes.

A planned mission to Uranus occurs at the perfect moment for this recent discovery. The recent discovery improves knowledge about this perplexing ice giant through fundamental research which establishes a robust framework for subsequent extensive investigation. Hubble reconfirms its position as one of the critical tools for space research through this latest discovery.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