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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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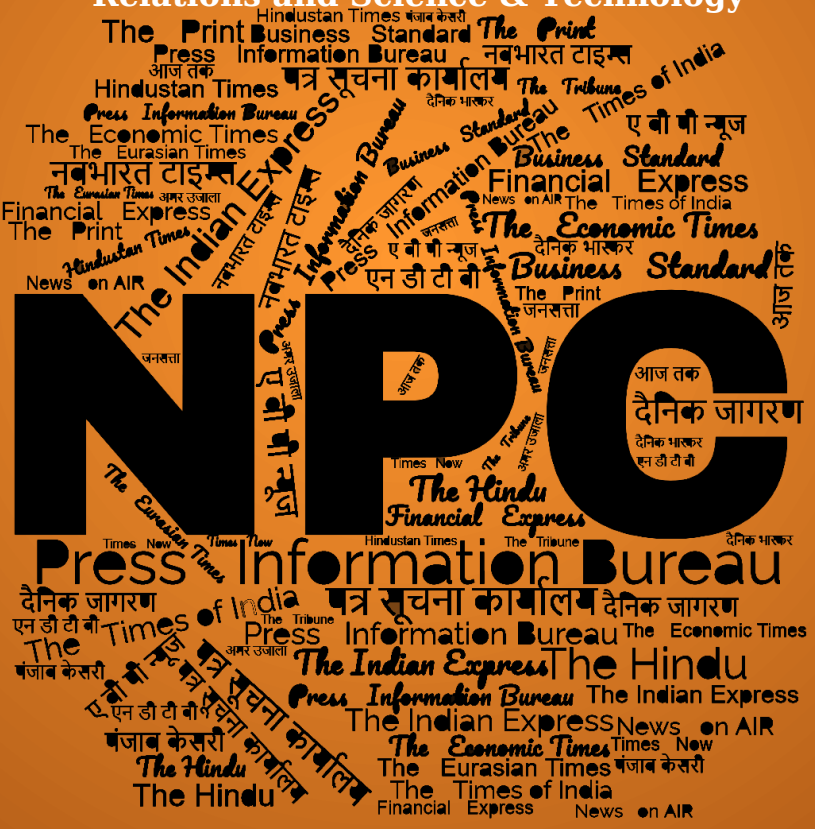

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Wed, 06 Sep 2023

Raksha Rajya Mantri Visits CVRDE, Chennai

Raksha Rajya Mantri, Shri Ajay Bhatt visited DRDO's Combat Vehicles Research & Development Establishment (CVRDE), Avadi, Chennai on 05th Sep 2023. He interacted with the scientists and reviewed the progress of on-going projects of the laboratory, evincing keen interest in the advanced systems developed by CVRDE.

Raksha Rajya Mantri appreciated the CVRDE fraternity for their unstinted efforts and contributions in the development of defence systems and emphasized the importance of the self-reliance in R&D systems. He commended DRDO's efforts in empowering the nation with 'Make in India' concept.

RRM also made a ride in the Main Battle Tank (Arjun Mk I A) and got familiarized with the advanced features of this indigenously developed tank.

https://pib.gov.in/PressReleasePage.aspx?PRID=1955159

R. REPUBLICWORLD.COM

Fri, 08 Sep 2023

IAF Tests Upgraded Variant of Indigenously Developed Military Combat Parachute System

A test jumper from the Indian Air Force (IAF) successfully executed a deliberate detachment of the main parachute, allowing the reserve to deploy autonomously through the Reserve Static Line (RSL) before the Barometric Automatic Activation Device could engage, as stated by the IAF on September 7.

Elevating tactical capabilities with advanced parachute systems

The Paratroopers Tactical Assault-Static Line (PTS-SL) system, an advanced iteration of the existing PTA (M) personnel parachute, was introduced by the Indian Air Force (IAF) to enhance their operational capabilities. It, as per DRDO sources, had the lowest worldwide rate of descent and opening shock, along with 360-degree steering ability. The parachute was designed for deployment from low-flying and low-speed aircraft such as AN-32, C-130, C-17, MI-17, etc. Weighing in at a maximum of 140 kg, it allowed for a max release speed of 240 Kmph. With a drop altitude range of 250 m to 8000 m, it ensured a controlled descent of less than 5 m/s for an all-up weight of 140 kg. The main parachute utilized a Toroidal design with a canopy area of 100 m2 and

a system weight of less than 12 kg (excluding reserve), deployed via a Main Static line. This system offered a substantial leap in performance for IAF paratroopers.

Reserves: Safety at its core

The reserve parachute, a crucial safety component in the IAF's parachute systems, provides a fail-safe mechanism in the event of main parachute failure. It featured a flat circular design with a canopy cap for swift deployment, as per data from DRDO. However, visuals from IAF showed a more cruciform type of design. The older canopy was constructed from 32 gsm Nylon fabric, and the suspension lines had a strength of 250 kilogram-force (kgf) for Nylon cordage and 318 kgf for Polyester cordage.

Older parachute system in use of IAF

Advancements had been made over time to the older PTA-M system, a significant upgrade, offering advanced aerodynamic features for smoother deployment and flight performance. This system supported a payload of up to 120 kg, deployed at speeds of up to 240 km/hr, and operated at altitudes as low as 250 metres above ground level. The main parachute was of the aero conical type, with a diameter of 10 metres and a packed weight of 15 kg, resulting in a descent rate of 5-6 m/s at sea level.

The Military combat parachute system

The Military Combat Parachute System, developed by the Aerial Delivery Research and Development Establishment (ADRDE), a pioneering R&D lab of DRDO, stood as an achievement in the domain of Aerodynamic Decelerators and Aerostat Systems. The IAF announced on social media, "In a historic event, the Military Combat Parachute System, #indigenously designed and developed by Aerial Delivery Research and Development Establishment (#ADRDE) was tested for its efficacy and foolproof functioning."

In addition to these advancements, the Combat Free Fall (CFF) System, jointly developed by ADRDE and Electromedical Laboratory (DEBEL), Bangalore, provides a comprehensive solution for paratroopers. This enabled jumps from as high as 30,000 feet and gliding up to a range of 30 km, ensuring precise landings at desired targets. The system's capabilities extend to both High Altitude High Opening (HAHO) and High Altitude Low Opening (HALO) modes, offering enhanced flexibility and adaptability in various operational scenarios.

https://www.republicworld.com/india-news/general-news/iaf-tests-upgraded-variant-of-indigenously-developed-military-combat-parachute-system-articleshow.html

bt | Business Today

Thu, 07 Sep 2023

G20 Summit: DRDO Installs Counter-Drone System that can Shoot Down Drones from a Distance

G20 Summit is set to begin in New Delhi on Saturday and several foreign delegates have already arrived for the two-day event. To tighten the security for such a large-scale global event, the Defence Research and Development Organisation (DRDO) has deployed a counter-drone system at the national capital. This will keep an eye on any possible drone threat.

This will provide protection against drones to foreign visitors. Defence sources said that these systems can take on drone threats from long distances. In addition to DRDO, as reported by ANI,

drone systems by Indian Army and some civilian agencies are already working to steer clear of any aerial threats at the event.

https://www.businesstoday.in/technology/news/story/g20-summit-drdo-installs-counter-drone-system-that-can-shoot-down-drones-from-a-distancein-addition-to-drdo-drone-systems-by-indian-army-and-some-civilian-agencies-are-already-in-place-397384-2023-09-07

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Sun, 10 Sep 2023

Indian Coast Guard Participates in 19th Heads of Asian Coast Guard Agencies Meeting (HACGAM) in Istanbul, Türkiye

Indian Coast Guard participated in the 19th Heads of Asian Coast Guard Agencies Meeting (HACGAM) from 05-08 Sep 2023 at Istanbul, Türkiye. A four-member ICG delegation led by DG Rakesh Pal, Director General Indian Coast Guard took part in the annual event of the independent forum with 23 members of Coast Guard Agencies and 02 associate members in the form of ReCAAP and UNODC.

During the three-day High-Level Meeting, in which heads of Coast Guards of all member nations participated, a series of vital issues including maritime law enforcement, safety and security of life at sea, marine environment protection, illicit trafficking of drugs, weapons, and humans at sea etc were discussed, and avenues for further cooperation were explored through the framing of agenda. The forum resolved to further bolster the maritime cooperation among the Asian Coast Guards.

This multilateral forum is an offshoot of the Japanese initiative to promote cooperation amongst regional Coast Guards, after the capture of the pirated vessel MV Alondra Rainbow by the Indian Coast Guard in Nov 1999. The HACGAM primarily focuses on fostering cooperation between the Coast Guards of the member Asian states to ensure and promote safe, secure, and clean seas in the region. The forum comprises four Working Groups to enable a focused and goal-oriented approach towards coordinated response and synergy towards common maritime issues. Indian Coast Guard is the chair of the Search and Rescue (SAR) Working Group and a proactive member of the other Working Groups which include environmental Protection, Controlling Unlawful Acts at Sea, and Information sharing. The last edition of the HACGAM was held in New Delhi in 2022.

https://pib.gov.in/PressReleasePage.aspx?PRID=1956064

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Sep 2023

21st Edition India France Bilateral Naval Exercise 'VARUNA' – 2023

Phase Il of the 21st edition of Varuna (Varuna-23) bilateral exercise between Indian and French Navy was conducted in the Arabian Sea. The exercise witnessed participation of guided missile frigates, tanker, Maritime Patrol Aircraft and integral helicopters from the two sides. The exercise was conducted over three days and witnessed joint operations, underway replenishment and various tactical manoeuvres. Units of both navies endeavoured to enhance and hone their war fighting skills, improve interoperability and demonstrate their ability to promote, peace, security and stability in the region. The first phase of 'Varuna-2023' was conducted off India's Western Seaboard from 16 to 20 Jan 23

(https://www.pib.gov.in/PressReleasePage.aspx?PRID=1891610).

Indian & French Navy bilateral naval exercise was initiated in 1993. The exercise was later christened as 'Varuna' in 2001 and has since become a hallmark of robust India-France strategic bilateral relationship. Having grown in scope and complexity over the years, this exercise provides an opportunity to learn from each other's best practices and procedures. The exercise also facilitates operational level interaction between the two Navies to foster mutual cooperation for good order at sea, underscoring the shared commitment to ensuring security, safety and freedom of the global maritime commons.

https://pib.gov.in/PressReleasePage.aspx?PRID=1955639

Press Information Bureau
Government of India

Ministry of Defence

Thu, 07 Sep 2023

INS Sumedha at Alexandria, Egypt for Ex- Bright Star-23

INS Sumedha arrived at Port Alexandria, Egypt on 06 September 2023 to participate in 'Exercise BRIGHT STAR- 23'. This edition of the multinational Tri-Services military exercise will see participation from 34 countries. It is the largest ever joint military exercise in Middle East & North Africa region.

Ex Bright Star 23 is scheduled to be conducted in two phases. The Harbour Phase involves wide-ranging activities such as cross-deck visits, professional exchanges, sports fixtures and interactions for planning and conduct of the Sea Phase. The Sea Phase will include complex and high intensity exercises encompassing cross deck flying, anti-surface and anti-air exercises including live weapon firing drills. The exercise provides an opportunity to the Indian Navy to enhance and demonstrate interoperability and also gain from the best practices in maritime security operations from its partner nations.

This is the maiden participation of Indian Navy in Ex Bright Star, which will also see participation of Naval ships from other Friendly Foreign Navies. The exercises will span over two weeks with intense operations and training, aimed at reaffirming the ability of the participating navies to operate together as an integrated force and to highlight their shared commitment to maritime security and global stability through collaborative training and mutual understanding.

INS Sumedha, commanded by Commander MC Chandeep, is the third ship of the indigenously built Saryu class Naval Offshore Patrol Vessels (NOPV) that possess long endurance, are fitted with requisite weapons, sensors, and capable of embarking an integral helicopter. A highly potent platform that can be deployed for a variety of operational missions, INS Sumedha bears testimony to the capabilities of the Indian shipbuilding industry which underscores the vision of 'Aatmanirbhar Bharat'.

https://pib.gov.in/PressReleasePage.aspx?PRID=1955399

Press Information Bureau
Government of India

Ministry of Defence

Fri, 08 Sep 2023

Deputy Chief of the Air Staff Flies the Hindustan Turbo Trainer HTT-40

Air Marshal Ashutosh Dixit AVSM VM VSM, Deputy Chief of the Air Staff flew the Hindustan Turbo Trainer Aircraft - 40 (HTT-40) Basic Trainer Aircraft, today at Bengaluru. Manufactured by Hindustan Aeronautics Limited (HAL), the aircraft has been indigenously designed and developed by the Aircraft Research & Design Centre of HAL and is based on the training requirements of the Indian Armed Forces.

The HTT-40 is a fully aerobatic aircraft, powered by a four bladed turbo-prop engine. It is fitted with a state-of-the-art glass cockpit, modern avionics and latest safety features, including a zero-zero ejection seat. The trainer has a maximum speed of 450 kilometers per hour and a maximum service ceiling of six kilometers. The HTT-40 first flew on 31 May 2016 and obtained system level certification on 06 June 2022. Clearance by Centre for Military Airworthiness and Certification for the full aircraft is currently underway.

The IAF signed a contract with HAL for the supply of 70 aircraft, the induction of which will commence on 15 September 2025 and continue till 15 March 2030. The HTT-40 will enhance the quality of training of ab-initio pilots of the Indian Armed Forces. The procurement will also include a Full Mission Simulator for the aircraft which will supplement the aerial training, allowing pilots to practice different profiles on ground, prior to the sorties.

HTT-40 is yet another step towards achieving greater self-reliance in the defence and aviation sphere in line with the Governments vision of 'Atma Nirbhar Bharat'.

https://pib.gov.in/PressReleasePage.aspx?PRID=1955532

Press Information Bureau
Government of India

Ministry of Defence

Wed, 06 Sep 2023

Indian Air Force and Drone Federation of India to Co-Host Bharat Drone Shakti 2023

Drone technology has revolutionised the civil and defence sectors by increasing efficiency, reducing exposure to risk as also by being a capability enhancer. The usage of drones in India is also seeing an increase - both, in the military, as well as in the civil domain. The IAF uses Remotely Piloted Aircraft extensively for Intelligence Surveillance & Reconnaissance operations. Its faith in the emerging Drone design and development capabilities in India are borne by its initiatives like the Meher Baba Swarm Drone competition that sought to tap this indigenous potential. Further iterations of this competition are currently underway.

To exploit its rich experience in using these unmanned platforms, the IAF is partnering with the Drone Federation of India to co-host the 'Bharat Drone Shakti 2023'. The event to be held on 25th & 26th September 2023 will be hosted at the lAF's airbase in Hindan (Ghaziabad), where the Indian drone industry shall give live aerial demonstrations.

'Bharat Drone Shakti 2023' will present the prowess of the Indian drone industry at full capacity hosting over 50+ live aerial demonstrations showcasing survey drones, agriculture drones, fire suppression drones, tactical surveillance drones, heavy-lift logistics drones, loitering munition systems, drone swarms, and counter-drone solutions and witness participation from more than 75 drone start-ups and corporates.

The event is expected to attract around 5,000 attendees, including representatives from central government, state departments, public and private industries, armed forces, paramilitary forces, representatives from friendly countries, academicians and students and drone enthusiasts. Most importantly, 'Bharat Drone Shakti 2023' will give a fillip to India's commitment to becoming a global drone hub by 2030.

https://pib.gov.in/PressReleasePage.aspx?PRID=1955079

Hindustan Times

Fri, 08 Sep 2023

India Initiates Process to Purchase 31 MQ-9B Drones from the US

India has initiated the process to purchase hi-tech drones from the US and issued a letter of request to Washington for 31 MQ-9B remotely piloted aircraft systems, officials familiar with the matter said on Friday on condition of anonymity. The letter mentions the tri-services requirements, details of equipment and terms of the procurement, the officials said. The US will respond with a letter of acceptance after which India will begin negotiations with the country, duly factoring in the price and terms offered to other countries, they added.

The proposed deal found mention in the June 22 joint statement issued by the US and India during Prime Minister Narendra Modi's first state visit to the US.

The drone deal will involve technology transfer and help bridge the technological gaps faced by the Defence Research and Development Organisation in developing such systems indigenously. The acquisition of the drones will be under the foreign military sales programme — Washington's government-to-government method of selling US-built platforms.

India's defence acquisitions council, the country's apex weapons procurement body, accorded its acceptance of necessity on June 15 to buy the General Atomics high altitude long endurance drones. The Indian Navy will get 15 drones, and eight each will be allocated to the Indian Army and the Indian Air Force.

General Atomics has offered the drones to India for $ 3.07 billion, subject to negotiations, as previously reported by HT. The estimated cost of the drones includes weapons, sensors, ground control stations, ground data terminals, ground handling equipment, spares and logistics support.

India will negotiate a higher element of technology transfer. It is looking at doubling the element of technology transfer that is currently on offer, from 8-9% to 15% to 20%. To be assembled in India, the versatile platform will have the capability to strike targets with its on-board weapons, it will be used for intelligence, surveillance and reconnaissance (ISR); and its other roles include electronic warfare, defensive counter air and airborne early warning.

https://www.hindustantimes.com/india-news/india-initiates-process-to-purchase-31-mq-9b-drones-from-the-us-101694148571608-amp.html

moneycontrol

Fri, 08 Sep 2023

India Says Navy Officers and their Families being Targeted by Cybercriminals

Indian government has warned that its Naval officers and their families are being targeted by cyber criminal groups in a bid to extract sensitive information from them.

This comes at a time when Indian defence personnel, including bodies such as Defence Research and Development Organisation (DRDO) etc are increasingly being earmarked by threat actors because of the frequency with which they deal with sensitive information.

The advisory by Indian Navy from last month said, "In addition to government agencies, personal devices of Naval personnel and their families are also being targeted to extract information.

"Various cyber security incidents remain either unreported or under-reported, which leads to paltry analysis of cyber security incidents," it said while urging victims to report such incidents.

The Navy warned its personnel of mobile-based malwares, those that are specifically designed to target mobile devices, such as smartphones, smartwatches and tablets.

The member of the Indian Armed Forces apprised its employees that cyber criminals can use methods such as making fake calls, enticing users to install fake apps and so on to deploy such malwares.

As part of its recommendations for preventing such cyber attacks, the Navy urged its personnel to keep system operating systems and apps updated, use trusted chargers or PC cables and so on. "A malicious charger or PC can load malware to the smartphone and take control of them," the advisory read.

Interestingly, the Navy also urged its personnel to disable advertisement tracking on Android and Apples iOS. "Disabling it will make it substantially harder for advertisers and data brokers to track and profile a user and will limit the amount of personal information that reaches the advertisers," the advisory read.

Earlier Moneycontrol had reported how another Indian defence body warned its employees of DogeRAT malware, which when infects a device can steal information from a smartphone, capture photos on the device and so on.

According to the advisory , the malware was being circulated by a cybercriminal group over Telegram under the guise of legitimate applications such as ChatGPT, the Opera Mini browser, premium versions of YouTube, and other popular apps and websites.

https://www.moneycontrol.com/news/business/india-warns-that-navy-officers-and-their-families-are-being-targeted-by-cybercriminals-11332781.html

THE HINDU BusinessLine

Fri, 08 Sep 2023

Modi-Biden Bilateral: Cooperation in Defence Research, Science, Semiconductor Supply Chains, and more

Prime Minister Narendra Modi on Friday welcomed United States President Joseph R. Biden to India, reaffirming the close and enduring partnership between the two countries with the India-US Initiative on Critical and Emerging Technology (iCET) to build open, accessible, secure, and resilient technology ecosystems and value chains as a critical component of the strategic partnership.

In a joint statement, the two leaders reiterated their support for building resilient global semiconductor supply chains, noting in this respect a multi-year initiative of Microchip Technology, Inc., to invest approximately $300 million in expanding its research and development presence in India and Advanced Micro Device's announcement to invest $400 million in India over the next five years to expand research, development, and engineering operations in India. The leaders expressed satisfaction at the ongoing implementation of announcements made in June 2023 by U.S. companies, Micron, LAM Research, and Applied Materials.

President Biden reaffirmed his support for a reformed UN Security Council with India as a permanent member, and, in this context, welcomed once again India's candidature for the UNSC non-permanent seat in 2028-29.

Praises Chandrayaan-3

President Biden congratulated Prime Minister Modi and the scientists and engineers of the Indian Space Research Organisation (ISRO) on Chandrayaan-3's historic landing at the south polar region of the moon, as well as the successful launch of India's first solar mission, Aditya-L1. Having set a course to reach new frontiers across all sectors of space cooperation, the leaders welcomed efforts

towards establishment of a Working Group for commercial space collaboration under the existing India-U.S. Civil Space Joint Working Group.

“Determined to deepen our partnership in outer space exploration, ISRO and the National Aeronautics and Space Administration (NASA) have commenced discussions on modalities, capacity building, and training for mounting a joint effort to the International Space Station in 2024, and are continuing efforts to finalise a strategic framework for human space flight cooperation by the end of 2023. India and the United States also intend to increase coordination on planetary defence to protect planet Earth and space assets from the impact of asteroids and near-Earth objects, including U.S. support for India’s participation in asteroid detection and tracking via the Minor Planet Center,” the joint statement read.

Sharing a vision of secure and trusted telecommunications, resilient supply chains, and global digital inclusion, Prime Minister Modi and President Biden welcomed the signing of a memorandum of understanding (MoU) between Bharat 6G Alliance and Next G Alliance, operated by Alliance for Telecommunications Industry Solutions, as a first step towards deepening public-private cooperation between vendors and operators. They further acknowledged the setting-up of two Joint Task Forces focused on collaboration in the field of Open RAN and research and development in 5G/6G technologies.

Collaborations

The leaders welcomed the signing of an MoU between Indian universities, represented by the Council of Indian Institutes of Technology (IIT Council), and the Association of American Universities (AAU) to establish the India-U.S. Global Challenges Institute, with a combined initial commitment of at least US$10 million.

The leaders welcomed completion of the Congressional Notification process on 29 August 2023 and the commencement of negotiations for a commercial agreement between GE Aerospace and Hindustan Aeronautical Limited (HAL) to manufacture GE F-414 jet engines in India, and recommitted to work collaboratively and expeditiously to support the advancement of this unprecedented co-production and technology transfer proposal.

The leaders applauded the conclusion of a second Master Ship Repair Agreement, with the most recent agreement signed by the U.S. Navy and Mazgaon Dock Shipbuilders, Ltd., in August 2023. Both sides recommitted to advancing India’s emergence as a hub for the maintenance and repair of forward-deployed U.S. Navy assets and other aircraft and vessels. The leaders also welcomed further commitments from U.S. industry to invest more in India’s maintenance, repair, and overhaul capabilities and facilities for aircraft.

The leaders commended the India-U.S. Defence Acceleration Ecosystem (INDUS-X) team for establishing a robust collaboration agenda to harness the innovative work of the U.S. and Indian defence sectors to address shared security challenges. INDUS-X convened the inaugural Academia Start-up Partnership at IIT Kanpur, with the participation of Penn State University, and initiated the Joint Accelerator Program for Indian start-ups, through a workshop led by U.S. accelerator M/s Hacking 4 Allies (H4x) and IIT Hyderabad in August 2023. Both sides also welcomed the announcement by the Indian Ministry of Defence’s Innovations for Defence Excellence and the U.S. Department of Defense’s Defense Innovation Unit to launch two joint challenges, which will invite start-ups to develop solutions to shared defence technology challenges.

https://www.thehindubusinessline.com/incoming/modi-biden-bilateral-cooperation-in-defence-research-science-semiconductor-supply-chains-and-more/article67286302.ece

THE HINDU

Fri, 08 Sep 2023

PM Modi, President Biden Welcome Progress in Defence Ties

Prime Minister Narendra Modi and U.S. President Joe Biden on Friday welcomed the completion of the notification process in the U.S. Congress on August 29 for a commercial agreement between General Electric Aerospace and Hindustan Aeronautics Ltd. (HAL) to manufacture GE F-414 jet engines in India and the commencement of the negotiations. The leaders lauded the settlement of the seventh and last outstanding World Trade Organization (WTO) dispute between the two countries.

Mr. Biden arrived in New Delhi in the evening to attend the G-20 Summit and went straight to Prime Minister Narendra Modi's official residence for a bilateral meeting. The summit will be held on Saturday and Sunday.

A joint statement issued after the bilateral talks said: "President Biden welcomed the issuance of a Letter of Request from the Ministry of Defence of India to procure 31 General Atomics MQ-9B (16 Sky Guardian and 15 Sea Guardian) remotely piloted aircraft and their associated equipment, which will enhance the intelligence, surveillance and reconnaissance capabilities of India's armed forces across all domains."

'Productive meeting'

"Happy to have welcomed U.S. President Joe Biden to 7 Lok Kalyan Marg. Our meeting was very productive. We were able to discuss numerous topics which will further economic and people-to-people linkages between India and USA. The friendship between our nations will continue to play a great role in furthering global good," Mr. Modi said on the social media platform 'X'.

Mr. Biden "lauded" India's G-20 presidency for demonstrating how the G-20 as a forum is delivering important outcomes, the joint statement noted.

The leaders reaffirmed their commitment to the G-20 and expressed confidence that the outcomes of the G-20 Leaders' Summit will advance the shared goals of accelerating sustainable development, bolstering multilateral cooperation, and building global consensus around inclusive economic policies... including "fundamentally reshaping and scaling up multilateral development banks".

Following Larsen & Toubro (L&T), which has concluded a second Master Ship Repair Agreement with the U.S. Navy to repair its warships and has so far undertaken three such repairs, Mazagaon Dock Shipbuilders Ltd, Mumbai has concluded a similar agreement in August 2023. Both sides recommitted to advancing India's emergence as a hub for the maintenance and repair of forward-deployed U.S. Navy assets and other aircraft and vessels, the joint statement said. "The leaders also welcomed further commitments from U.S. industry to invest more in India's maintenance, repair, and overhaul capabilities and facilities for aircraft," it said.

On space cooperation, the leaders welcomed efforts towards establishment of a working group for commercial space collaboration under the existing India-U.S. Civil Space Joint Working Group. The Indian Space Research Organisation (ISRO) and the National Aeronautics and Space Administration (NASA) have "commenced discussions on modalities, capacity building, and training for mounting a joint effort to the International Space Station in 2024, and are continuing efforts to finalise a strategic framework for human space flight cooperation by the end of 2023," the statement said.

Mr. Biden arrived in New Delhi in the evening, in his maiden visit to India as President. As Mr. Biden disembarked from Air Force One, Gen V. K. Singh (retd), the Minister of State for Road Transport and Highways and Civil Aviation, received him. This was followed by a small cultural performance.

Earlier, interacting with the accompanying U.S. media team aboard Air Force One, U.S. National Security Adviser Jake Sullivan, responding to questions on press access, said, “This meeting will be taking place at the Prime Minister’s residence. So, it is unusual in that respect. This is not your typical bilateral visit to India with meetings taking place in the Prime Minister’s office. This is the host of the G-20 hosting a significant number of leaders, doing so in his home, and he has set out the protocols.”

Mr. Biden is expected to visit India again in January-end. As reported by The Hindu earlier, efforts are on by India to have the three leaders of Quad grouping [comprising Australia, Japan, the U.S. and India] as chief guests for the Republic Day parade on January 26. Discussions are under way on it, officials said. If that doesn’t work out, plan is to invite Mr. Biden alone as chief guest for the parade.

Earlier, interacting with the accompanying U.S. media team aboard Air Force One, U.S. National Security Adviser Jake Sullivan, responding to questions on press access, said, “This meeting will be taking place at the Prime Minister’s residence. So, it is unusual in that respect. This is not your typical bilateral visit to India with meetings taking place in the Prime Minister’s office. This is the host of the G-20 hosting a significant number of leaders, doing so in his home, and he has set out the protocols.”

Mr. Biden is expected to visit India again in January-end. As reported by The Hindu earlier, efforts are on by India to have the three leaders of Quad grouping [comprising Australia, Japan, the U.S. and India] as chief guests for the Republic Day parade on January 26. Discussions are under way on it, officials said. If it doesn’t work out, plan is to invite Mr. Biden alone for the parade.

In June this year, in an “unprecedented” development the two countries settled six of the outstanding bilateral trade disputes in the WTO. Mr. Biden has been keen to see India join the Indo-Pacific Economic Forum’s “Trade” pillar launched in May 2022, which India has so far stayed away from, as reported earlier.

On high technology cooperation, the statement said that U.S. and India intend to undertake a midterm review of the Initiative on Critical and Emerging Technology (iCET) in September 2023 to continue to drive momentum toward the next annual iCET review, co-led by the National Security Advisors of both countries, in early 2024, the statement added.

https://www.thehindu.com/news/national/us-president-joe-biden-lands-in-delhi-holds-talks-with-pm-modi/article67286164.ece

The Tribune

Mon, 11 Sep 2023

G20 Summit: India, France Discuss New Goals in Defence

Prime Minister Narendra Modi and French President Emmanuel Macron on Sunday reiterated their commitment to further strengthen defence cooperation through forward-looking alliances in design, development, testing and manufacture of advanced defence technologies and platforms.

In their meeting on the sidelines of the G20 summit, they also agreed to expand defence production in India, including catering to the requirements of third countries in the Indo-Pacific, and in this respect called for early finalisation of the defence industrial roadmap.

The two leaders were meeting barely two months after their last interaction when the Prime Minister was invited as a Guest of Honour for celebration of French National Day and to commemorate the 25th anniversary of the India-France strategic partnership.

They also discussed the overall progress and next steps on the implementation of the new and ambitious goals for cooperation in areas of defence, space, nuclear energy, digital public infrastructure, critical technology, climate change, education, and people-to-people contacts, according to a joint statement issued at the end of the interaction.

They also carried forward their discussions on the India-France partnership in the Indo-Pacific region and Africa.

At their last meeting, Macron and PM Modi had witnessed the signing of a pact between the French company Safran and the Indian PSU HAL for the transfer of technology of "forging and castings" for the Shakti Engine which powers all variants of the Advanced Light Helicopter (ALH) after 2009. The engine is being made under a JV, the 500th engine was delivered in February this year, but HAL is yet to lay its hands on core technologies.

Mazagon Dockyard Ltd (MDL) and Naval Group of France have also signed an MoU for the construction of three additional Scorpene class submarines and with greater indigenous content. Named "Kalvari class" in India, six such vessels have already been made, the last one is set to be commissioned early next year.

New Delhi has also cleared the purchase of 26 Rafale-Marine aircraft along with associated ancillary equipment, weapons, simulator, spares, documentation, crew training and logistic support for the Indian Navy.

Chalking out defence industrial roadmap

Both sides reiterated their commitment to defence cooperation through partnership in defence technologies

They agreed to expand production in India, including catering to third countries in the Indo-Pacific region

https://www.tribuneindia.com/news/india/india-france-discuss-new-goals-in-defence-543114

The Indian EXPRESS

Mon, 11 Sep 2023

G20 Summit: How Win-Win Came, Para by Para; Paves way Ahead on Ukraine War

By Shubhajit Roy

As the curtains fell on the G20 Summit Sunday, the consensus arrived in the G20 New Delhi Leaders' Declaration set the stage for the diplomatic and political conversation on the Russia-Ukraine conflict with a hope — across the spectrum — that the text is expected to set the tone for any negotiations between the two warring sides: the West-led G7 grouping that is backing Ukraine, and Russia, which has Beijing's support in the form of a no-limits friendship.

The consensus text “enables us to look ahead to what should be the solution for a just and lasting peace at the end of the war in Ukraine,” a G7 official said.

The Indian Express spoke to officials from several member states to find that behind the hectic negotiations that went into the joint communique, lay hard work to build common ground and articulate a formulation acceptable to all.

What framed the challenge was the fact that the two paras in the Bali declaration lay shattered within a month of the November 2022 G20 Summit, the sense being that these, by echoing the UN resolutions — where India had abstained — deploring Russian aggression, were “divisive” and “divergent.”

Bali had recorded the G7 position of condemnation of the war in Ukraine and the Russian position on unilateral sanctions. It had the West’s formulation on the war’s impact on the global economy but also factored in the Russian-Chinese stance that G20 is an economic forum that does not discuss security issues. It did acknowledge the impact of security on the economy but also flagged the UN charter on dialogue and diplomacy and the phrase that “today’s era must not be of war.”

The Delhi declaration needed a “completely new language,” said an official closely involved in the process. “We needed a text that had something for everyone so that each member can go back with a win.”

In almost 200 G20 meetings across 50 locations, the G7 pushed for a maximalist language in its criticism of Russia. And Russian interlocutors would look at China, which stood up for its “no-limits friendship”. So sharp was the divide that the two sides refused to get photographed together at every G20 meeting.

New Delhi decided, therefore, to reach out to each member individually and separately, which took hours of painstaking conversation to get a sense of each one’s red lines. Russia and China, sources said, were almost always on the same page: they did not want mention of Russian aggression or condemnation of the war in Ukraine.

The G7 grouping wanted a reference to UN resolutions, mention of “war and territorial expansionism” and the pointed phrases: “sovereignty and territorial integrity of States must be respected”, and “just, and durable peace in Ukraine”.

New Delhi made the “voice of Global South” the fulcrum of the argument, and first roped in Brazil, the next host in 2024. The Brazilians were the most active and supportive partners. Later, the South Africans joined in, since they are the hosts in 2025. These three, along with the last host Indonesia, became a team, and worked on each of these negotiating teams.

At the political level as well, there was outreach to leaders from both sides —Modi spoke to Putin and Jaishankar met Lavrov; South African President Cyril Ramaphosa spoke to Chinese President Xi Jinping and Brazilian Foreign Minister Mauro Vieira spoke to his Russian counterpart Sergey Lavrov.

There was consensus on two aspects. One, the G20 is the last working and functioning global forum, and it should not go the UNSC way where veto power has blocked any movement and the body has effectively collapsed. And, two, the Global South was most adversely hit by the consequences of the war.

This framed the backdrop for the “creative ambiguity” that was needed to come up with a language acceptable to both sides. It was communicated to the G7 by the Global South countries that if they wanted to have a consensus, a direct reference to Russia would have to be omitted — since that was the Bali’s divisive consensus. So, while the UN resolutions were recalled, unlike last time, there was no mention of voting records and abstentions.

An illustrative line in the Delhi declaration is about “threat or use of force to seek territorial acquisition against the territorial integrity and sovereignty or political independence of any state.” For the G7, this was targeted at Russia. For Russia, it was targeted at the US, UK or France. Indeed, Lavrov mentioned the territorial expansionist activities by the G7 countries today. This was also a message from the developing countries to the powerful P-5.

The other new formulation that was raised by the Chinese and the Russians was that G20 is the economic forum and not a political one. New Delhi and the Global South framed it in a way that it acknowledged that while the Russian and the Chinese view is correct, geopolitical and security issues can have an impact on the economic situation as well — a contention of the West, led by G7 grouping.

This was seen as a win by both sides.

The Global South, the prime mover of the new language, brought in the impact they were suffering from — something that both G7 and the Russia-China bloc agreed with.

The most difficult and bitterly contested paragraph that India had to negotiate on was the one on military infrastructure and civilians.

While the West saw this as a criticism of Russian action in Ukraine, Moscow saw this as something they are also suffering from in the war. That is what New Delhi felt was the “creative ambiguity” behind the formulation: “In this context, emphasizing the importance of sustaining food and energy security, we called for the cessation of military destruction or other attacks on relevant infrastructure. We also expressed deep concern about the adverse impact that conflicts have on the security of civilians thereby exacerbating existing socio-economic fragilities and vulnerabilities and hindering an effective humanitarian response”. Both warring sides felt that this reflected their grievance.

Another challenging paragraph was the reference to the Black Sea Grain Initiative, which had not found a mention in the recently concluded BRICS summit as well. India, South, Brazil and Indonesia — who positioned themselves as speaking for the Global South, packaged it as something important for the developing and least developed countries — a point that Russia and China could not reject.

Also added to this para was the need to “meet the demand in developing and least developed countries, particularly those in Africa.” The fact that the African Union was joining the summit added formidable weight to this.

The G7 wanted that Ukraine’s call for “just, and durable peace” must be reflected in the communique. This was included in the paragraph by New Delhi under its broad summit theme: “We will unite in our endeavour to address the adverse impact of the war on the global economy and welcome all relevant and constructive initiatives that support a comprehensive, just, and durable peace in Ukraine that will uphold all the Purposes and Principles of the UN Charter for the promotion of peaceful, friendly, and good neighbourly relations among nations in the spirit of ‘One Earth, One Family, One Future’.”

New Delhi also added paragraphs on territorial integrity: Beijing found it applicable for US approach to Taiwan; Delhi saw it as a message to China over the border standoff; G7 saw it as a message to Russia and Moscow saw it as a message to NATO. “We call on all states to uphold the principles of international law including territorial integrity and sovereignty, international humanitarian law, and the multilateral system that safeguards peace and stability. The peaceful resolution of conflicts, and efforts to address crises as well as diplomacy and dialogue are critical.”

https://indianexpress.com/article/explained/g20-summit-how-win-win-came-para-by-para-paves-way-ahead-on-ukraine-war-8933849/

THE TIMES OF INDIA

Fri, 08 Sep 2023

US to Give Kyiv Anti-Tank Uranium-based Ammo

The US has announced it's sending depleted uranium anti-tank rounds to Ukraine, following Britain's lead in sending the controversial munitions to help Kyiv push through Russian lines in its gruelling counteroffensive. The 120 mm rounds will be used to arm the 31 M1A1 Abrams tanks the US plans to deliver to Ukraine in the fall.

The announcement coincides with top US diplomat Antony Blinken's visit to Kyiv in a gesture of support as a Ukraine counteroffensive against occupying Russian troops grinds into its fourth month with only small gains.

The armour-piercing rounds were developed by the US during the Cold War to destroy Soviet tanks, including the same T-72 tanks that Ukraine now faces in its counteroffensive. Depleted uranium is a by product of the uranium enrichment process needed to create nuclear weapons. The rounds retain some radioactive properties, but they can't generate a nuclear reaction like a nuclear weapon would, nuclear expert Edward Geist said. Depleted uranium ammos were used by US tanks in the 1991 Gulf War against Iraq's T-72 tanks and again in the invasion of Iraq in 2003, as well as in Serbia and in Kosovo.

Although Britain sent depleted uranium munitions to Ukraine earlier this year, this would be the first US shipment of the ammunition and will likely stir controversy. The Kremlin said that the US would have to answer for the "very sad consequences" of its decision. Spokesman Dmitry Peskov said Nato's heavy use of such ammunition in bombing Yugoslavia in 1999 had caused a jump in cases of cancer and other diseases.

The use of depleted uranium munitions is fiercely debated; the International Coalition to Ban Uranium Weapons says ingesting or inhaling even depleted uranium dust can cause cancers and birth defects. But a UNreport on the impact of depleted uranium on Serbia and Montenegro, in thenYugoslavia, found "no significant, widespread contamination".

https://timesofindia.indiatimes.com/world/us/us-to-give-kyiv-anti-tank-uranium-based-ammo/articleshow/103485918.cms

THE TIMES OF INDIA

Sat, 09 Sep 2023

New Submarine can Launch Nuclear Weapons, Says North Korea

North Korea said Friday its new submarine has nuclear attack capabilities after years of development. Leader Kim Jong-un described the milestone as crucial in his efforts to build a nuclear-armed navy to counter the US and its Asian allies.

The North's official Korean Central News Agency said the vessel, named "Hero Kim Kun Ok," is designed to launch tactical nuclear weapons from underwater but did not specify the number of missiles it could carry and fire.

South Korean officials were skeptical that the submarine would work as North Korea described and said it likely wasn't ready for operational duty. Still, the vessel's development underscored how the North continues to potentially extend the range of its nuclear arsenal with systems that are harder to detect in advance.

Based on Kim Jong-un's comments and photos by North Korean state media, it's likely the submarine is the same one Kim inspected in 2019 while it was under construction. At the time, experts assessed it as an effort to convert an existing Romeo-class submarine.

The submarine appears to have at least 10 launch tubes - four of them apparently larger than the other six - that are possibly designed for missiles. Satellite photos on Friday placed the submarine and the ceremony that Kim took part in the eastern port city of Sinpo.

https://timesofindia.indiatimes.com/world/rest-of-world/new-submarine-can-launch-nuclear-weapons-says-north-korea/articleshow/103519656.cms

Science & Technology News

THE HINDU

Wed, 06 Sep 2023

IIT-T and NDRF Conference Sheds Light on Latest Findings on Advanced Materials

The 29th international conference on 'Processing and Fabrication of Advanced Materials 2023' brought together more than 350 delegates from across the globe, who discussed the latest findings on advanced materials and the need for high-end research in the emerging sector.

Jointly hosted by Indian Institute of Technology Tirupati (IIT-T) and Bengaluru-based National Design and Research Forum (NDRF), the event began at the former's campus here on Wednesday, with its Director K.N. Satyanarayana and conference Chairman M. Ravisankar setting the agenda in motion.

Satyanarayana spoke on fostering interdisciplinary collaboration and innovation in the field of advanced materials. He welcomed the presence of several researchers, academicians, industry experts and students at the event.

A.P.V.S. Prasad, Chief Executive, CEMILAC, DRDO, Bengaluru was present as the chief guest, while Homi Bhabha National Institute Vice-Chancellor U. Kamachi Mudali and The University of Akron (USA) professor emeritus T.S. Srivatsan deliberated on topics such as additive manufacturing, nanomaterials, biomaterials, composites, ceramics, metals and alloys, smart materials, surface engineering, welding and joining, modeling and simulation.

The deliberations were followed by keynote speeches, plenary sessions, oral presentations, poster sessions and workshops. NDRF Chairman P. Raghothama Rao, organising secretary Ajay Kumar and Director S. Seetharamu were also present during the inaugural.

https://www.thehindu.com/news/national/andhra-pradesh/iit-t-and-ndrf-conference-sheds-light-on-latest-findings-on-advanced-materials/article67277879.ece

mint

Sun, 10 Sep 2023

ISRO's Aditya L1 Successfully Performs 3rd Earth-bound Manoeuvre; Fourth to Take Place on This Date

Aditya-L1, India's first solar mission, has successfully performed the third earth-bound manoeuvre, Indian Space Research Organisation (ISRO) said on Sunday. The new orbit attained by the satellite is 296km x 71767 km. A total of five such orbit manoeuvring will be performed during the satellite's revolution around the Earth of which three have been successfully performed.

In a post on X, the space agency wrote, “The third Earth-bound manoeuvre (EBN#3) is performed successfully from ISTRAC, Bengaluru. ISRO's ground stations at Mauritius, Bengaluru, SDSC-SHAR and Port Blair tracked the satellite during this operation. The new orbit attained is 296 km x 71767 km."

“The next manoeuvre (EBN#4) is scheduled for September 15, 2023, around 02:00 Hrs. IST," ISRO said.

Earlier, the second earth-bound manoeuvre was successfully performed on September 5, attaining an orbit of 282 km x 40225 km while the 1st was performed on 3 September.

What does Aditya L1's orbit raising maneouver mean?

An orbital manoeuvre, also called as burn, is a regular protocol during a spaceflight. During this exercise, the orbit of the satellite or spacecraft, is increased by using propulsion systems. This process will include rockets firing and also adjustment of angles. To understand the process, take the example of a person on a swing. To make the swing go higher, a pressure is applied when the swing is coming down towards the ground. Similarly, once Aditya L1 will gain enough velocity, it will slingshot around to its intended path towards L1.

Meanwhile, after the successful landing of Chandrayaan-3 near the South pole of the moon, ISRO had launched the country's maiden solar mission -- Aditya-L1 from the Satish Dhawan Space Centre in Sriharikota on September 2.

It carried seven different payloads to have a detailed study of the Sun, four of which will observe the light from the Sun and the other three will measure in-situ parameters of the plasma and magnetic fields.

Aditya-L1 will be placed in a halo orbit around Lagrangian Point 1 (or L1), which is 1.5 million km away from the Earth in the direction of the sun. It is expected to cover the distance in four months' time. It will stay approximately 1.5 million km away from Earth, directed towards the Sun, which is about 1 per cent of the Earth-Sun distance. The Sun is a giant sphere of gas and Aditya-L1 would study the outer atmosphere of the Sun.

ISRO said Aditya-L1 will neither land on the sun nor approach the sun any closer.

This strategic location will enable Aditya-L1 to continuously observe the sun without being hindered by eclipses or occultation, allowing scientists to study solar activities and their impact on space weather in real-time. Also, the spacecraft's data will help identify the sequence of processes that lead to solar eruptive events and contribute to a deeper understanding of space weather drivers.

Major objectives of India’s solar mission include the study of the physics of solar corona and its heating mechanism, the solar wind acceleration, coupling and dynamics of the solar atmosphere,

solar wind distribution and temperature anisotropy, and origin of Coronal Mass Ejections (CME) and flares and near-earth space weather.

Aditya-L1 is a satellite dedicated to the comprehensive study of the sun, which will find out the unknown facts about the sun. The satellite will travel on Earth-bound orbits for 16 days, during which it will undergo five manoeuvres to gain the required speed to reach its destination.

Subsequently, Adiya-L1 will undergo a trans-Lagrangian1 insertion manoeuvre that will take 110 days. The satellite will travel approximately 15 million kilometres to reach the L1 point. Upon arrival at the L1 point, another manoeuvre binds Aditya-L1 to an orbit around L1, a balanced gravitational location between the Earth and the Sun, according to information shared on ISRO's official website.

https://www.livemint.com/science/news/isros-aditya-l1-successfully-performs-3rd-earth-bound-manoeuvre-11694305852121.html

Thu, 07 Sep 2023

Israeli Scientists Create Model of Human Embryo without Eggs or Sperm

Scientists in Israel have created a model of a human embryo from stem cells in the laboratory, without using sperm, eggs or a womb, offering a unique glimpse into the early stages of embryonic development.

The model resembles an embryo at day 14, when it acquires internal structures but before it lays down the foundations for body organs, according to the team at Israel's Weizmann Institute of Science.

The scientists' work was published in the journal Nature on Wednesday after a pre-print came out in June, during the International Society for Stem Cell Research (ISSCR)'s annual meeting in Boston.

The Israeli team emphasised that they were a long way from being able to create an embryo from scratch. "The question is, when does an embryo model become considered an embryo? When that happens, we know the regulations. At the moment we are really, really far off from that point," said team leader Jacob Hanna.

However, they said the work could open the door to new ways to test the effect of drugs on pregnancies, better understand miscarriages and genetic diseases, and perhaps even to grow transplant tissues and organs.

"They are not identical. There are differences from human embryos, but still, this is the first time, if you open an atlas or a textbook, you can say - yeah I can really see the similarity between them," said Hanna.

He said his team took stem cells derived from adult human skin cells, as well as others cultured in the lab, then reverted the cells to an early state with the potential to develop into different cell types. They then manipulated them to form the basis of something structurally resembling an embryo. It is not an actual or synthetic embryo - a term criticised by the ISSCR and other scientists - rather a model showing how one works.

"In about 1 percent of the aggregates we can see that the cells start differentiating correctly, migrating and sorting themselves into the correct structure, and the farthest we could get is day 14 in human embryo development," he said.

Their next goal, Hanna said, is to advance to day 21 and also reach a threshold of a 50% success rate.

Magdalena Żernicka-Goetz, a professor of development and stem cells at the University of Cambridge, said the study joins six other similar human embryo-like models published from teams around the world this year, including from her lab.

"None of these models fully recapitulate natural human development but each adds to ways in which many aspects of human development can now be studied experimentally," she said.

The study raises some ethical questions over the possibility of potential future manipulation in human embryo development, Hanna and others noted. He drew a comparison to nuclear physics, however, arguing that you should not stop all research in that field because somebody might choose to make a nuclear bomb.

It is important to engage and fully inform the public, he said, with "nothing done in the shadows".

https://www.reuters.com/science/israeli-scientists-create-model-human-embryo-without-eggs-or-sperm-2023-09-07/

The Indian EXPRESS

Fri, 08 Sep 2023

Japan Moon Mission Takes off, Landing in Four to Six Months

After several weather-related postponements, Japan's Moon-lander mission, called SLIM, finally took off Thursday morning. A successful landing on the Moon by the SLIM spacecraft would make Japan only the fifth country in the world to do so.

SLIM, or Smart Lander for Investigating Moon, is taking a uniquely long route to the Moon and is scheduled to make a landing in four to six months. If successful, SLIM would be the smallest and lightest spacecraft to land on the Moon.

Indian Space Research Organisation (ISRO) sent its greetings to Japan Aerospace Exploration Agency (JAXA) on the successful launch.

"Congratulations JAXA on the successful launch of the SLIM lander to the moon. Best wishes for another successful lunar endeavour by the global space community," ISRO said.

The H-IIA rocket that took the SLIM in space also carried an X-Ray Imaging and Spectroscopy Mission (XRISM), a satellite meant for astronomical observations. XRISM was separated from the rocket 14 minutes after the launch and deployed in its intended orbit. XRISM will perform high-resolution X-ray spectroscopic observations of the hot gas plasma wind that blows through the galaxies, and its studies would focus on determining mass-energy flows, composition and evolution of celestial objects.

The SLIM spacecraft was detached from the rocket 47 minutes after the launch and deposited in an Earth-orbit where it will perform orbit-raising manoeuvres over the next few days just like Chandrayaan-3 did in its initial phase.

This is the first Moon-landing attempt being made by Japan Aerospace Exploration Agency (JAXA). An earlier attempt made by a private Japanese company in May this year had ended in a failure.

SLIM is a pretty small spacecraft, weighing just about 200 kg. In comparison, Chandrayaan-3 lander module weighed about 1,750 kg. The main objective of SLIM is to demonstrate precision landing, within 100 metres of the chosen site. The mission is being pitched as one that would demonstrate that it was possible to land on the Moon "where we want, not just where it is easy to land".

JAXA said "pinpoint" landing technology was essential to ensure that a spacecraft was close enough to scientifically-interesting sites on the Moon, accessible by a rover. The chosen landing site for SLIM is near a small crater named Shioli in the equatorial region of the Moon.

"Because the landing site is located near a crater, the surrounding area is sloped to approximately 15 degrees. Therefore, the method of landing safely on such a slope becomes important," JAXA said.

"As science and exploration objectives become more sophisticated, landing on such sloping area will be increasingly required in the future. Especially for the case of a SLIM-scale spacecraft, the "two-step landing method", in which the main landing gear first touches the ground and then rotates forward to stabilize, has shown excellent reliable landing results through simulation," it said.

https://indianexpress.com/article/technology/science/japan-launches-moon-sniper-lunar-lander-slim-to-space-8928261/