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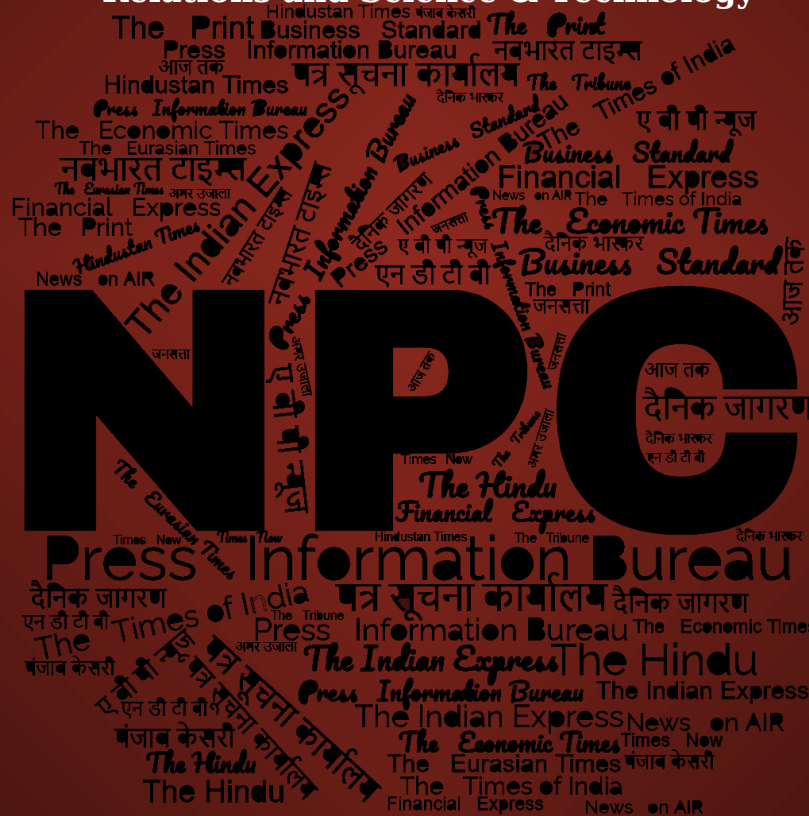
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THE TIMES OF INDIA

Tue, 29 Aug 2023

DRDO Chief, DG Inspect Work at BrahMos Unit

A team of experts, including DRDO chairman and secretary of the department of defence research and development, Samir V Kamat, and DRDO director general Purusottam Bej, inspected the progress of work at the upcoming Defence Technology and Testing Centre (DTTC), at Amausi and Nadarganj, on Monday.

They also inspected integration and testing facilities at BrahMos manufacturing centre at Bhatgaon.

Kamat directed the authorities concerned to complete the project by the end of this year.

DTTC is being established in Lucknow to provide technical consultancy and handholding, testing and training support to industries, primarily under the Uttar Pradesh Defence Industrial Corridor (UPDIC).

DRDO is the knowledge partner to UPDIC and an MoU was signed between the two during the DefExpo 2020 in Lucknow.

On December 26, 2021, Chief Minister Yogi Adityanath and Union defence minister Rajnath Singh had laid the foundation stone for DTTC and BrahMos manufacturing centre in Lucknow.

During inspection, representatives of the defence minister suggested that the matters which require help from the state government, including district administration and police, should be listed by DRDO so that the issues could be resolved immediately.

Officials said that DTTC was being set up to accelerate the growth of defence and aerospace manufacturing clusters in UPDIC.

Defence Materials and Stores Research & Development Establishment (DMSRDE), a laboratory of DRDO in Kanpur, is the nodal agency for the administration and technical operation of DTTC.

It is proposed to have a 'Modelling & Simulation Centre for Computational Technologies' at Amausi. Technical Testing & Evaluation Centre and Industry Support Centre are being set up in Nadarganj.

DTTC will provide technical support for innovations, incubation centres, start-ups, skill development in association with IIT-Kanpur, IIT-BHU and the Uttar Pradesh government.

<https://timesofindia.indiatimes.com/city/lucknow/drdo-chief-dg-inspect-work-at-brahmos-unit/articleshow/103151190.cms>

Tue, 29 Aug 2023

DRDO to Set up 3 Food Processing Units

Three food processing units are being set up in the district with the help of Defence Research Development Organisation (DRDO) soon. The centres include tomato incubation centre which will produce tomato ketchup, powder, sauce and other biproducts.

Squash and juice will be produced with sweet lemons and salted roasted peanuts and peanut butter with groundnuts which are in huge demand in Western countries.

The state government of late has also decided to promote food processing units in a big way as the district had emerged as a horticulture hub with potential for setting up pomegranate, sweet lime and bananas etc. Groundnut is another agriculture product which requires processing centres.

To handle the fluctuation of prices, efforts are being made with the help of DRDO Food Research Laboratories for setting up food processing units to ensure value addition to the produce.

MP Rangaiah held discussions with the DRDO chairman in this regard, which resulted in the visit of DRDO scientists to the district. These processing units will take a concrete shape and will become a reality soon.

<https://www.thehansindia.com/andhra-pradesh/drdo-to-set-up-3-food-processing-units-818869>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Mon, 28 Aug 2023

India & Bangladesh Hold the Fifth Annual Defence Dialogue in Dhaka

India and Bangladesh held the fifth Annual Defence Dialogue on 28 August 2023 in Dhaka. Defence Secretary Shri Giridhar Aramane, who is on a two day visit to Bangladesh on 27-28 August 2023, co-chaired the meeting with his Bangladeshi counterpart Lt Gen Waker-Uz-Zaman, Principal Staff Officer, Armed Forces Division. The Annual Defence Dialogue between India and Bangladesh is the highest institutionalized interactive mechanism between both the countries. In

the dialogue, both the countries highlighted its significance in chartering the future course of the relations between the two Armed Forces.

During the meeting, the ongoing defence cooperation activities between the two countries were reviewed and both sides expressed satisfaction at the increasing defence cooperation engagements. The talks covered the existing bilateral exercises and both sides agreed to increase the complexity of these exercises.

Shri Giridhar Aramane and Lt Gen Waker-Uz-Zaman acknowledged the fruitful dialogue and stressed that both countries look forward to continued engagement based on the common understanding reached at the fifth Annual Defence Dialogue.

The Armed Forces of both countries continue to seek bilateral cooperation in multiple fields and the increased engagements are a positive sign for the future of the relations of both countries.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1952947>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 28 Aug 2023

Kenyan Cabinet Secretary for Defence Arrives on a 3-Day India Visit; Talks with Raksha Mantri Shri Rajnath Singh on 29th August

Cabinet Secretary for Defence, Kenya Mr Aden Bare Duale arrived in New Delhi on August 28, 2023 on a three-day visit to India. Raksha Mantri Shri Rajnath Singh will hold talks with his Kenyan counterpart on 29th August. The visiting dignitary is expected to visit Indian shipyards and defence industries in Goa and Bengaluru during his stay.

This is the maiden visit of Cabinet Secretary Duale to India and the highest level stand-alone political visit from Kenya since the new government assumed office in September 2022. The visit is indicative of the importance India attaches to its relations with African nations and the growing cooperation between India and Kenya, in particular. It is expected to open new avenues for further strengthening defence cooperation between the two countries.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1952811>



Mon, 28 Aug 2023

Indian Air Force Contingent Reaches Egypt, to Participate in Multilateral Tri-Service Exercise

In a significant move towards fostering global defence cooperation, an Indian Air Force (IAF) contingent reached the Egyptian Air Force Base to participate in Exercise BRIGHT STAR-23 on Monday.

“Touchdown at the Egyptian Air Force base in Cairo. Our home for the next three weeks”, informed the Indian Air Force on X, formerly Twitter.

The IAF contingent will take part in the biennial multilateral tri-service exercise at Cairo (West) Air Base, which started on Sunday and will culminate on September 16, the Ministry of Defence informed through a press release.

This will mark the first participation of the IAF in Ex BRIGHT STAR-23, which will also see the participation of air force contingents from the US, Saudi Arabia, Greece and Qatar.

The Indian Air Force contingent comprises 5 MiG-29s, 2 IL-78s, two C-130s and two C-17 aircraft. Personnel from the IAF's Garud Special Forces, as well as those from the Numbers 28, 77, 78 and 81 squadrons will also be participating in the exercise. The IAF transport aircraft will provide airlift to approximately 150 personnel from the Indian Army.

The IAF's participation is not just aimed at boosting global defence cooperation but practice planning and execution of joint operations. Besides fostering a stronger bonding of air warriors beyond borders, such exercises also provide a means to further strategic relations between participating nations, an MoD release stated earlier.

IAF contingents participating in such exercises abroad are thus no less than Diplomats in Flight Suits, the release added.

India and Egypt have traditionally had an exceptional relationship and deep cooperation, with the two countries jointly undertaking the development of aero-engine and aircraft in the 1960s and the training of Egyptian pilots by their Indian counterparts.

The relationship between the two countries was further strengthened with the recent visits by the Chief of Air Forces of the two countries and the Indian Defence Minister and Prime Minister to Egypt. The two countries have also enhanced their joint training with regular exercises between their Armed Forces.

<https://www.aninews.in/news/world/others/indian-air-force-contingent-reaches-egypt-to-participate-in-multilateral-tri-service-exercise20230828110359/>



Mon, 28 Aug 2023

India, France Begin Talks on Rs 50,000 Crore Rafale Marine Jets Deal

India and France have initiated discussions on the Rafale-M fighter aircraft deal, following an announcement by the Defence Acquisition Council (DAC) last month.

Teams from both countries are in talks to finalise the details of the project, costing over Rs 50,000 crore.

A French team, led by an official from their Directorate General of Armament, visited India last week for discussions with Indian defence officials.

This was the first meeting post the clearance of the deal in the Defence Acquisition Council meeting last month, prior to Prime Minister Narendra Modi's visit to France on July 14.

The Rafale Marine jets will be used by the Indian Navy for defence operations from its aircraft carriers.

The jets will be deployed on the INS Vikrant and INS Vikramaditya, replacing the currently used MiG-29.

This marks the second purchase of fighter jets from Dassault Aviation by India in recent years.

The Indian Navy, grappling with a shortage of aircraft and submarines, had previously emphasised the urgency of fulfilling its requirements.

The Defense Acquisition Council approved the proposal to acquire 26 Rafale-M fighter aircraft for the Indian Navy, inclusive of 22 single-seated Rafale marine aircraft and four twin-seater trainer versions.

<https://www.indiatoday.in/india/story/india-france-begin-talks-rafale-marine-deal-defence-acquisition-2427850-2023-08-28>



Tue, 29 Aug 2023

Initiative Begins to Prepare Defence Start-ups to Expand to US Markets

INDUS-X (India-U.S. Defense Acceleration Ecosystem), an initiative to build a defence innovation bridge by Innovations for Defence Excellence (iDEX) of the Ministry of Defence, and the US Department of Defence (DoD), began an exercise to begin the Indo-US CrossLinX accelerator programme to prepare defence start-ups to expand to the US markets, on Monday.

IIT-Hyderabad's iTIC Incubator - supported by the Department of Science and Technology (DST), and H4XLabs organised a workshop for the same at the launch event.

Once the start-ups are ready, they would embark on a trip to the US for seven to 10 days to engage with government officials, investors, defence contractors, and stakeholders.

At the programme's culmination, start-ups would showcase their products as part of Demo Day in India, said an official release.

The launch event included a series of sessions on the US defence landscape by experts from diverse domains. The event saw the participation of various defence start-ups and MSMEs – medium, small-scale and micro-enterprises from across India.

“We are confident about the blooming strategic cooperation between India and the US through various initiatives like iCET and INDUS-X and assure the support of IIT-H to such initiatives,” said IIT-Hyderabad director B.S. Murthy. Dean Suryakumar said: “The Joint Accelerator Program is a testament to the collaborative spirit of INDUS-X and we hope that it will galvanise the Indian start-ups for global presence.”

IDex programme director Capt. Roy Joseph talked about opportunities for start-ups under the Indo-US collaboration agenda. Since its inception in 2015, iTIC supported 130+ start-ups through pre-incubation, incubation, and acceleration programs and has directly sanctioned more than ₹8 crore to start-ups. So far, iTIC start-ups have generated over ₹1,200 crore of revenues and created 1,000 plus jobs.

Other dignitaries present were D. Alan Johnson (Lt Col-United States Air Force, Director-Defense Cooperation in Armaments DCA, U.S. Embassy, New Delhi), Jonathan Mangrum (Policy Advisor for South Asia, OSD - OUSD Policy- Indo Pacific Security Affairs), ecosystem partner EriK Azulay (Director and Founder-ACIR), Capt. Roy Joseph, Program Director, iDEX) and team from iDEX.

<https://www.thehindu.com/news/national/telangana/initiative-begins-to-prepare-defence-start-ups-to-expand-to-us-markets/article67244198.ece>



Mon, 28 Aug 2023

Rajnath Singh to Visit Sri Lanka this Weekend, Say Defence Sources

Union Defence Minister Rajnath Singh is scheduled to visit Sri Lanka over the coming weekend, defence sources confirmed. The visit comes at a time when the Sri Lankan Foreign Ministry is considering a fresh request from China to allow the visit of a research ship.

The Defence Minister is scheduled to go on a two-day visit to the island nation, two defence sources confirmed. As per Sri Lankan media reports, Mr. Singh is expected to visit Trincomalee where India is jointly investing in the joint development of Oil Tank farm, under an agreement signed in January 2022.

Last week, the Sri Lankan Foreign Ministry acknowledged receiving a request from the Chinese Embassy. The research vessel Shiyan-6 is expected to arrive in October. This request comes shortly after a Chinese warship docked at the Colombo Port from August 10 to August 12, exactly a year after the visit of a Chinese vessel 'Yuan Wang-5' caused a major diplomatic showdown between New Delhi and Colombo.

Entry into Indian Ocean Region

Later in November, another vessel 'Yuan Wang-6' had entered Indian Ocean Region coinciding with a planned Indian long range missile launch but the launch was then deferred and the vessel had re-entered the IOR in December when the missile test was rescheduled.

Indian Air Force (IAF) Chief Air Chief Marshal V. R. Chaudhari was on an official visit to the island nation in May. During the visit, he donated AN-32 transport aircraft propellers to Commander of Sri Lanka Air Force at Katunayake Air Base.

Meanwhile, on August 15, Indian Envoy to Sri Lanka Gopal Baglay ceremonially handed over the Indian Navy Dornier aircraft to the Sri Lankan Air Force, a year after the first was handed over, following Sri Lanka's request in 2018 for two Dornier Reconnaissance Aircraft to enhance the maritime surveillance capabilities of the island nation. "The induction of state-of-the-art Indian Navy Dornier Maritime Reconnaissance aircraft would exponentially increase the surveillance capability of Sri Lanka and would be force multiplier for the Sri Lanka Air Force," the Indian High Commission said in a statement.

In June, the Indian mission organised the first India-Sri Lanka Defence Seminar and Exhibition in Colombo to "promote and identify" newer areas of cooperation and collaboration between the two countries in the defence sector.

Last year, the neighbours signed two pacts for Sri Lanka to receive a floating Dock Facility from the Government of India “at no cost” and the provision of “Dornier Reconnaissance Aircraft” by India to Sri Lanka “free of charge”. While neither side had officially announced the signing of the deals, a media clarification by Sri Lanka’s Ministry of Defence brought the development to light.

<https://www.thehindu.com/news/national/rajnath-singh-to-visit-sri-lanka-this-weekend-say-defence-sources/article67245012.ece>

Science & Technology News



Tue, 29 Aug 2023

Pragyan Rover Avoids Crater, Data Collection Key Objective Now: ISRO

The Pragyan rover on Sunday retraced its path to avoid a 4-metre-wide crater on the lunar surface in a delicate display of its maneuvering abilities.

The rover is now safely heading on a new path, the Indian Space Research Organisation said in a statement on Monday.

“Chandrayaan-3 Mission: On August 27, 2023, the Rover came across a 4-meter diameter crater positioned 3 meters ahead of its location. The Rover was commanded to retrace the path. It’s now safely heading on a new path,” the statement said.

The rover is designed to avoid obstacles in the path, a senior scientist from the Chandrayaan-3 mission team said, adding that a dedicated team is monitoring its movement to steer it clear of any such obstacles.

“The rover relies on commands given to it for movement on the lunar surface. Through the navigation cameras, our teams monitor the rover’s movement and give commands to it for movement. If there is an obstacle, such as the crater that we encountered yesterday, we retract the path,” the scientist explained.

With nine more days to go for the lunar sunset when the mission life will end, the focus of the agency is maximise findings from the lander, Vikram, and rover, and optimize their operations, scientists said.

All equipment in the mission is solar powered, and the mission is scheduled to end with the lunar sunset – on September 6.

“The focus currently is on observations more than analysis. All the payloads are functional and are providing us very good data,” said Anil Bhardwaj, director, Physical Research Laboratory, one of Isro’s labs that is closely involved in the Chandrayaan-3 mission.

The agency is waiting for “ample lighting facing the lander” to get photos of the lander on the lunar surface clicked by cameras on board the rover, he said. “A big factor on the lunar surface is lighting and the inclination, which ensures visibility. As soon as we get ample lighting facing the lander, we will be in a position to release those pictures,” Bhardwaj said.

The mission has three objectives — to demonstrate a safe and soft landing on the moon surface, to demonstrate roving abilities on the surface of moon, and to conduct in-situ scientific experiments.

Chandrayaan-3's lander made a successful soft landing near the south pole of the moon on August 23. On Friday, the rover rolled out of the lander's belly over a two-segment ramp. On Sunday, agency released temperature variation data observed on the lunar surface by the lander module.

Over the next nine days, the lander and the rover will conduct a series of experiments on the lunar surface, where it will analyse the chemical and mineral composition of materials — dust and rock — on the surface.

<https://www.hindustantimes.com/india-news/pragyan-rover-navigates-lunar-crater-safely-heads-on-new-path-in-chandrayaan-3-mission-101693248766784.html>



Mon, 28 Aug 2023

Moon Mission Done, ISRO Aims for the Sun with Aditya-L1 Launch on September 2

ISRO confirms the launch date for its high-anticipated sun mission — Aditya-L1 just a few days after the soft landing of the Pragyan rover on the south pole of the moon. According to the official tweet, ISRO will launch the PSLV-C57 for the Aditya L1 mission on September 2.

This is the first space-based Indian observatory to study the Sun from ISRO, which will be scheduled for launch on September 2, 2023, at 11:50 IST from Satish Dhawan Space Center in Sriharikota. Interested users can register themselves on ISRO's official website to witness the PSLV-C57 rocket launch from the Launch View Gallery at Sriharikota.

The mission Aditya-L1 from ISRO will travel for a total distance of 1.4 million kilometers from Earth, which is four times as far as the moon. First, the spacecraft will be placed in a low earth orbit, and then it will be made more elliptical to launch towards the Lagrange point (L1) using onboard propulsion.

Named after Italian-French mathematician Joseph-Louis Lagrange, Lagrange points are positions in space with enhanced regions of attraction and repulsion, produced by gravitational forces of the Sun and the Earth, which can be used for the propulsion of the spacecraft.

Aditya L1 mission will carry 7 payloads to observe the photosphere, chromosphere and corona in different wavebands. The mission consists of a Visible Emission Line Coronagraph (VELC) payload designed and developed by the Indian Institute of Astrophysics (IIA) Bengaluru. Similarly, it also includes the Solar Ultraviolet Imaging Telescope (SUIT), developed by the Inter-University Centre for Astronomy and Astrophysics, Pune.

These will help ISRO to collect data on how Corona's temperature can reach over a million degrees while the sun itself has a peak temperature of over 6000 degrees Centigrade.

“The SUITs of Aditya L1 payloads are expected to provide the most crucial information to understand the problem of coronal heating, coronal mass ejection (CME), pre-flare and flare activities and their characteristics, dynamics of space weather, propagation of particle and fields etc,” ISRO said.

As the spacecraft continues to travel towards L1, it will exit from the earth's gravitational sphere of influence (SOI). During the cruise phase, the spacecraft will be injected into a large halo orbit

around L1. According to ISRO, this mission involves a total travel time of about four months from launch to L1 with a distance of 1.5 million kilometers.

The major objective of ISRO's Aditya L1 mission is to get a deeper understanding of the sun, which includes coronal heating and solar wind acceleration, coupling and dynamics of the solar atmosphere, solar wind distribution and temperature anisotropy.

<https://indianexpress.com/article/technology/science/isros-solar-mission-aditya-l1-to-be-launched-on-september-2-says-space-agency-8913266/>



Mon, 28 Aug 2023

L&T in Talks with ISRO to Build Launch Vehicles for LEO Satellites

Larsen & Toubro (L&T) is in talks to acquire space technology from the Indian Space Research Organisation (ISRO) to build launch vehicles for low earth orbit satellites (LEOs).

“We have the heritage, and we would like to leverage it. We have seen the presence of private players in countries like the US, but that has not happened in the rest of the world. In space, there is upstream, midstream, and downstream. The midstream and downstream involve equipment in space and applications. The upstream is putting objects into space, and we see players like us playing in the upstream. The robustness of the business model has to evolve with a constellation of satellites for communication and other purposes that will be put into the low earth orbit. We are trying to acquire technology for the small satellite launch vehicles. This would take payloads of 500 kg into the low earth orbit. That is a business we are focussing on. It will happen in the next three to five years,” AT Ramchandani, Executive Vice-President and Head, of L&T Defence told businessline.

The Mumbai-headquartered company has been working with ISRO for 50 years, and contributed to the manufacture of the launch vehicle for the SLV 3. It also contributed equipment required for the Chandrayaan mission, and is working on ISRO's missions Aditya -L1 and Gaganyaan.

L&T and HAL consortium PSLVs

L&T and Hindustan Aeronautics Limited (HAL) were awarded a ₹860-crore contract for the construction of five Polar Satellite Launch Vehicles (PSLV) for ISRO, and the first launch will be in mid-2024. With the launch, the companies are expecting to operate a commercial venture.

“The first launch, a pilot of five launches will happen next year, and through this mechanism where ISRO is an observer we build a launch vehicle and participate in the missions. Over time, we run it as a commercial venture wherein ISRO exits out of providing launch services or selling launch capacity,” added Ramchandani.

<https://www.thehindubusinessline.com/companies/lt-in-talks-with-isro-to-build-launch-vehicles-for-leo-satellites/article67243782.ece>

