

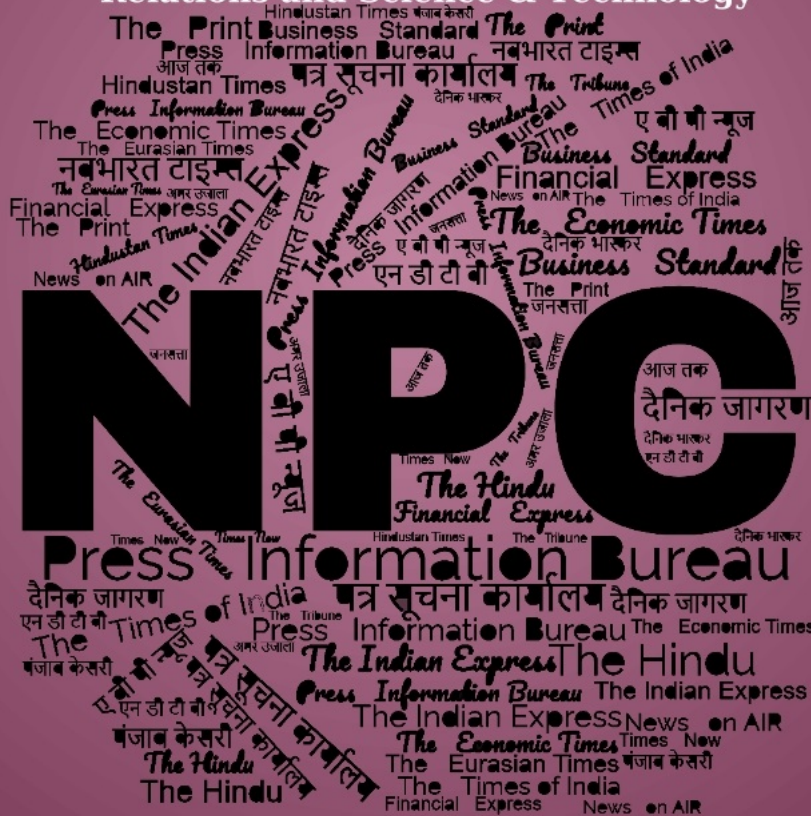
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Press Information Bureau
Government of India

Ministry of Defence

Mon, 07 Oct 2024

DefConnect 4.0: Raksha Mantri launches ADITI 2.0 challenges & DISC 12 to foster innovation, entrepreneurship & 'Aatmanirbharta' in defence

Raksha Mantri Shri Rajnath Singh launched the second edition of Acing Development of Innovative Technologies with iDEX (ADITI 2.0) challenges and the 12th edition of Defence India Start-up Challenges (DISC 12) during DefConnect 4.0 at Manekshaw Centre, Delhi Cantt. on October 07, 2024.

ADITI 2.0 features 19 challenges from the Armed Forces and allied agencies in the domains of Artificial Intelligence (AI), Quantum Technology, military communication, anti-drone systems customised for military platforms and adaptive camouflage, etc. This scheme offers a grant of up to Rs 25 crore to Innovations for Defence Excellence (iDEX) winners, focusing on critical technological areas crucial for strengthening the defence ecosystem of the country.

DISC 12 presents 41 challenges across key technology domains, including Unmanned Aerial Vehicles (UAVs), AI, Networking and Communication, with grants up to Rs 1.50 crore. Notably, it introduces the Medical Innovations and Research Advancement (MIRA) initiative, featuring nine challenges aimed at fostering the development of medical technologies to meet the medical demands of the Armed Forces. To provide momentum to the iDEX initiative, DISC was launched in partnership with Atal Innovation Mission, aimed at supporting start-ups/MSMEs/Innovators to create prototypes and/or commercialise products/ solutions in the area of national defence and security.

In his address, Raksha Mantri commended DefConnect for playing a crucial role in developing the culture of innovation in the country. He stated that the platform is bringing a new energy to the defence industrial ecosystem, and making the nation's talent a partner in strengthening the security apparatus. Terming DefConnect as an important link between all the stakeholders associated with

the defence ecosystem, he exuded confidence that the platform will help in realising the vision of 'Aatmanirbharta' in defence.

Enumerating the feats achieved due to the Government's efforts to promote innovation, Shri Rajnath Singh informed that iDEX has received over 9,000 applications so far, and is currently collaborating with more than 450 start-ups & MSMEs through DISC and Open Challenge. He added that 26 products have been developed under iDEX, for which procurement orders worth more than Rs 1,000 crore have been placed. In addition, Acceptance of Necessity and Request for Proposal worth over Rs 2,380 crore have been issued for 37 products. The ADITI initiative is focusing on over 30 critical and strategic technologies to strengthen the defence ecosystem, he said.

Raksha Mantri highlighted the vibrant and dynamic ecosystem of innovators, entrepreneurs, scientists & start-ups in the country, stating that the world is acknowledging the strength & talent of India's youth. He reiterated the Government's commitment to further enhance the role of the private sector in the defence ecosystem. Their involvement is necessary to achieve self-reliance, he said.

Shri Rajnath Singh pointed out that as soon as the Government, led by Prime Minister Shri Narendra Modi, came to power in 2014, it identified 'lack of private sector participation in the defence sector' as a major hurdle in attaining self-reliance, and strived to increase their contribution in nation building. "There were two major dimensions of self-reliance in the defence sector. First was the manufacturing of arms/equipment, whose technology was available, but there was a lack of production capacity. Second was catering to the needs of high-technology applications in view of the constantly-changing nature of warfare. Earlier, only in-house R&D and organisations like DRDO were working towards the development of such cutting edge technologies. But now, we are witnessing a significant role of the private sector too. There is enhanced synergy between the public & private sectors, the biggest example of which is DefConnect," he said.

Raksha Mantri appreciated the 'SIDBI iDEX Partner Incubator Fund', stating that the collaboration will meet the critical funding needs of innovators. SIDBI (Small Industries Development Bank of India) will allocate Rs 50 crore to 10 leading partner incubators, including Foundation for Innovation and Technology Transfer at IIT Delhi, Society for Innovation & Entrepreneurship at IIT Bombay, and Technology-Hub Hyderabad, to fund iDEX winners in advancing critical defence technologies.

On the new technologies being incorporated in wars and conflicts, Shri Rajnath Singh said apart from conventional arms & ammunition, many dual use or purely civilian tech is being weaponised. He called for an in-depth understanding of these technologies, exhorting the innovators to make imaginative use of the advancements for the defence of the nation.

Stressing on the need to move forward from imitative to innovative and distinctive technologies, Raksha Mantri called upon the private sector to think beyond the solutions to challenges being provided through ADITI & DISC. He urged them to bring forth the tech which is far ahead of the requirements of the Armed Forces and would be beneficial to deal with future threats. He promised the Government's full assistance to achieve the goal of a strong & self-reliant defence sector.

On the occasion, Shri Rajnath Singh also felicitated the ADITI 1.0 winners, and extended his best wishes for their future endeavours. Leading iDEX winners showcased their cutting-edge solutions related to Munition Systems, Intelligence, Surveillance & Reconnaissance, Communication Systems & Space Technologies, as part of DefConnect 2024. The winners include QuNu Labs, Sagar Defence Technologies, Astrome Technologies, Zeus Numerix Pvt. Ltd., NewSpace Research and Technologies, Pixxel Space India etc.

Chief of the Army Staff General Upendra Dwivedi, Chief of the Air Staff Air Chief Marshal AP Singh, OSD, Department of Defence Shri RK Singh, Secretary (Defence Production) Shri Sanjeev Kumar, Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat, Financial Advisor (Defence Services) Shri Sugata Ghosh Dastidar, other senior officials of Ministry of Defence, industry leaders, academia, young entrepreneurs & innovators attended the event.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2062888>

THE ECONOMIC TIMES

Mon, 07 Oct 2024

Decade of Transformation: Indian Army strengthens armoured capability with tank T-90

As part of the ongoing 'Decade of Transformation' in the Indian Army, General Upendra Dwivedi, Chief of the Army Staff on Monday witnessed the rollout ceremony of the overhauled T90 Bhishma tank, according to a press release from the Indian Army.

The successful overhaul of the T-90 Bhishma was conducted by the Corps of Electronics and Mechanical Engineers (EME) at the 505 Army Base Workshop in Delhi Cantonment. The comprehensive overhaul of the T-90 at the 505 Army Base Workshop represents a significant step in ensuring the operational readiness of the Indian Army's armoured formations, the press release said.

More than 200 assemblies and sub-assemblies are meticulously removed and rebuilt using precise machining and resetting techniques. The technicians at the 505 Army Base Workshop (EME), using customised machines and Test Benches supplied by the Original Equipment Manufacturer (OEM), have demonstrated their technical prowess by independently rebuilding and testing the T-90's mechanical, electronic, and instrumental components.

Each component is thoroughly tested using Automated Test Equipment (ATEs) before being refitted, ensuring the tank's readiness for all-terrain operations and providing a new lease of life to the tank. General Dwivedi praised the technicians and officers of the Corps of EME for their dedication and skill in achieving this landmark, urging them to continue pushing the boundaries of innovation and expertise in future undertakings.

The press release reads, "As the Indian Army continues to advance its technical prowess during its ongoing Decade of Transformation, the successful overhaul of the T-90 tank exemplifies the indigenous capability to maintain and enhance critical warfighting platforms. This achievement underscores the 'Atmanirbhar Bharat', nation's commitment to building a self-reliant and technologically advanced defence force. Through strategic initiatives in defence manufacturing and maintenance, the ongoing transformation aims to elevate India's defence capabilities to new heights."

<https://economictimes.indiatimes.com/news/defence/decade-of-transformation-indian-army-strengthens-armoured-capability-with-tank-t-90/articleshow/114019375.cms>



Mon, 07 Oct 2024

France to help set up an aeronautical campus and industry cluster in India

France will be setting up a Franco-Indian campus on aviation and space apart from an aeronautical cluster in India, French Ambassador Thierry Mathou announced on Monday during the inaugural ceremony held to mark French Aerospace Industries Association's (GIFAS) five-day visit to India.

The French delegation comprising 100 high-level representatives from over 60 companies is in India to meet their counterparts here to look for opportunities to grow their market as well as enhance co-operation in the aerospace sector. It is made up of seven prime contractors, 20 equipment manufacturers, 29 MSMEs and four start-ups covering the entire spectrum of the French civil, space and defence aeronautics industry. French majors such as Airbus, Dassault Aviation, Safran, and Thales are prominent among them.

"France is closely associated with India. 55% of French exports to this country are in the aeronautical sector amounting to €2.7 billion for the first part of 2024. These are exports by GIFAS companies," said Mr. Mathou, adding that defence companies too were not only strengthening their footprint in India but helping integrate Indian companies with the global supply chain.

He said there is an emergence of a Franco-Indian ecosystem in the aerospace sector in India, and France planned to replicate the same in the field of outer Space. The Ambassador said that France is planning to set up a Franco- Indian campus for professional training in aeronautics and space in India to provide a framework for enhancing co-operation between the two countries in the domain of training as many Indians already participate in trainings at the National School of Aviation in Toulouse, France, and its Director General of Civil Aviation.

An existing MoU will be renewed to this effect. The Chairman of GIFAS and CEO of Airbus, Guillaume Faury, said that the GIFAS companies employed 17,000 people in India and had a network of 230 suppliers here.

Speaking about sourcing from Airbus alone from India, he said the company had doubled procurement from €500 million worth of sourcing in 2019 to a €1 billion in 2023 and this would continue to double every five years. Responding to a demand from the Indian government for a final assembly line (FAL) for commercial aircraft given the large orders from Indian airlines, Mr. Guillaume said, “A FAL is the tip of the iceberg.”

He said that a FAL was not the most important factor in manufacturing an aircraft, but large equipment, fragile supply chains lower in the supply structure were.

“There are plenty of opportunities for companies around the world to contribute to develop the supply in the current environment,” he said, adding that Indian suppliers had crossed over from supplying engineering and IT services to hardware and in 2023 they provided more hardware for Airbus helicopters and planes rather than the former.

<https://www.thehindu.com/news/national/france-to-help-set-up-an-aeronautical-campus-and-industry-cluster-in-india/article68729667.ece>



Mon, 07 Oct 2024

India-Italy maiden Carrier Strike Groups exercise off the West Coast

In yet another sign of improved bilateral links, the Carrier Strike Groups of the Indian and Italian navies exercised for the first time for two days in the Arabian Sea during which they fired weapons in a coordinated manner.

Held on Oct 5-6, the Carrier Strike Group exercise was led by the two aircraft carriers INS Vikramaditya and ITS Cavour along with missile destroyer INS Visakhapatnam and frigate ITS Alpino, an Indian Navy spokesperson said.

With the situation improving in the last three years, the two strike groups held intense operations with their integral fighter aircraft and helicopters, for combined large force engagements, air combat missions, helicopter operations and search and rescue missions, the spokesperson said.

India’s MiG-29K and Italy’s F-35B flew together for joint missions in the western seaboard. The two navies also carried out co-ordinated weapon firings and manoeuvres to underscore joint operations as well as command and control capabilities, and enhance interoperability.

“A key facet of the landmark exercise was the participation of IAF that undertook manoeuvres with Italian carrier aircraft including large force engagements and combat missions,” he said.

The sea phase of the exercise was preceded by a harbour phase which saw expert exchanges between the two sides and other professional interactions as well as a pre-sail planning conference

that included participation of the Indian Air Force. Last year India and Italy signed a defence cooperation agreement after a series of steps were taken to normalise the bilateral relations.

<https://www.deccanherald.com/india/india-italy-maiden-carrier-strike-groups-exercise-off-the-west-coast-3223126>

THE ECONOMIC TIMES

Mon, 07 Oct 2024

India, Maldives agree to work together in advancing maritime, security cooperation

India and the Maldives, as "natural partners", on Monday resolved to work together in advancing maritime and security cooperation for the benefit of peoples of both the countries as well as the Indian Ocean Region.

A vision document, which was issued after bilateral talks between Prime Minister Narendra Modi and visiting Maldivian President Mohamed Muizzu here, also said the two countries share common challenges in the Indian Ocean Region.

The document -- India and Maldives: A Vision for Comprehensive Economic and Maritime Security Partnership -- said that the two sides agreed to "inaugurate at an early date the state-of-the-art Maldivian Ministry of Defence (MoD) building in Male, constructed with India's assistance, that will augment modern infrastructural capacity of the MoD".

India and the Maldives share common challenges in the Indian Ocean Region which have multi-dimensional implications for the security and development of both the countries, it said.

"As natural partners, they resolve to work together in advancing the maritime and security cooperation for the benefit of peoples of both India and Maldives as well as for the larger Indian Ocean Region," the two countries said in the document.

The Maldives, with its vast Exclusive Economic Zone, is exposed to traditional and non-traditional maritime challenges including piracy, IUU (illegal, unreported and unregulated) fishing, drug smuggling, and terrorism, it said. The two countries agreed that India, as "a trusted and dependable partner", will work closely with Maldives in sharing of expertise, augmenting capabilities and undertake joint cooperative measures, as per needs and requirements of the island nation.

They also agreed that the ongoing Maldives National Defence Force (MNDF) 'Ekatha' harbour project at Uthuru Thila Falhu (UTF) with India's assistance will significantly contribute towards enhancing MNDF's operational capabilities, and agreed to extend full support for its timely completion, the document added.

New Delhi and Male also agreed to support the Maldives with provisioning of defence platforms and assets to augment capabilities of MNDF as well as that of the government of Maldives in advancing its maritime and security requirements in line with its national priorities.

The two sides agreed to support the Maldives in enhancing surveillance and monitoring capability of MNDF with the provisioning of radar systems and other equipment, and to support the archipelago nation on hydrographic matters, including, through capacity building and training, as per the requirements of the government of Maldives, it said.

Meanwhile, Foreign Secretary Vikram Misri at an evening briefing here said the Maldives has always been a key part, an integral part of India's 'Neighbourhood First' policy, and the SAGAR (Security And Growth for All in the Region) vision.

"This relationship is historic, it's been underpinned by very close people-to-people ties, by trade and economic relations and by a very, very substantive developmental partnership between the two countries," he said. Misri said this vision document is a blueprint for a relationship that has been charted out in the last several years and provides a framework for the ongoing visit.

The two sides agreed to strengthen cooperation in the area of disaster response and risk mitigation, including through development of SOPs and exercises to achieve enhanced interoperability, the document said. As also to assist the Maldives in the domain of information sharing by supporting the development of capabilities through infrastructure, training and sharing of best practices, it added.

Besides, they agreed to "increase capacity building and training slots for MNDF, Maldives Police Services, and other security organisations of Maldives under the ITEC programmes and other customised training programmes in India" and to extend financial assistance to develop and upgrade MNDF infrastructure.

<https://economictimes.indiatimes.com/news/defence/india-maldives-agree-to-work-together-in-advancing-maritime-security-cooperation/articleshow/114020673.cms>

THE ECONOMIC TIMES

Tue, 08 Oct 2024

Russian, Chinese ships conduct joint drills in Pacific, Russia's agencies report

Russian and Chinese navy warships have practiced anti-submarine missions in the northwestern Pacific Ocean as part of a joint patrol in the Asia-Pacific region, Russian news agencies reported on Tuesday.

"A tactical group of warships manoeuvred and formed a marching order to organise anti-submarine defence," Interfax agency cited the press service of the Russian Pacific Fleet as saying.

The agency reported that Russian and Chinese Navy ships have begun joint patrols after participating in the Beibu/Interaction 2024 naval exercises in September.

A number of training sessions and combat training exercises were planned during the patrol missions, Interfax reported, including organising antisubmarine defence and rescue at sea. Interfax did not provide a timeline of the exercises.

From the Russian side, the large anti-submarine destroyers Admiral Panteleyev and Admiral Tributs of the Pacific Fleet participated, Interfax reported. China was represented by the destroyers Xining and Wuxi, the frigate Linyi and the integrated supply ship Taihu, the agency added.

<https://economictimes.indiatimes.com/news/defence/russian-chinese-ships-conduct-joint-drills-in-pacific-russias-agencies-report/articleshow/114029728.cms>

Science & Technology News

THE ECONOMIC TIMES

Mon, 07 Oct 2024

NGLV development model will be announced soon: ISRO chief S Somnath

The model for the development of the Next Generation Launch Vehicle (NGLV) will be announced soon and that will provide a huge opportunity for industries to come into the space sector right at the beginning of design itself, ISRO chief S Somanath said on Monday. Last month, the Union Cabinet approved the development of NGLV. It will be a significant step towards establishing and operating the Bharatiya Antariksh Station, as well as towards developing capability for Indian crewed landing on the Moon by 2040.

While mentioning about NGLV, Somanath on Monday said ISRO will support the development but the production and launches will move over to the industry right at the beginning. The mode for developing NGLV will be announced soon. It is going to be a huge opportunity for industries to come into the space sector right in the beginning of design itself, he added.

The NGLV development project will be implemented with maximal participation from the Indian industry, which is also expected to invest in the manufacturing capacity at the outset itself, an official release said on September 18.

The space policy announced by the Union government in 2023 seeks to have enhanced private sector participation in the sector. Speaking at the conference organised by the French Aerospace Industries Association (GIFAS) in the national capital, Somanath said that more than 20 satellites have been launched by France's Ariane rocket and hoped that more will be there in the future.

"We are also discussing various possibilities, including development of liquid engines, the one which is already under development in France as well as future high thrust engine developments....," he added.

<https://economictimes.indiatimes.com/news/science/nglv-development-model-will-be-announced-soon-isro-chief-s-somanath/articleshow/114017439.cms>

THE TIMES OF INDIA

Tue, 08 Oct 2024

ISRO to build 3rd launch pad, next-gen rocket could also land on sea

With India's space mission expanding both in size and vision, the Indian Space Research Organisation (ISRO) is all geared up for the establishment of the third launch pad at its spaceport in Sriharikota. In an exclusive interview with TOI, Isro chairman S Somanath said: "We only have the second launch pad now. The first one was created for PSLV, but it can't be used for GSLV as it cannot handle the cryogenic stage.

When LVM-3 came, we re-engineered the second launch pad. Now, LVM-3 will also have a semi-cryo stage, and the human spaceflight initially has to happen there." Pointing out that the second launch pad has been undergoing several improvements in the past two decades, Somanath said in case something happens to the second launch pad — an explosion, for instance — there won't be a launch pad available for GSLV, and every programme will come to a standstill.

Redundancy & NGLV

"The primary objective of the third launch pad is to serve as a redundancy. Next is that we are moving to a new philosophy with the NGLV (New Generation Launch Vehicle); it is going to be integrated horizontally and tilted, not vertically. The launch pad must support this aspect. NGLV will be more liquid engine booster-based than solid engine, so the entire launch pad jet deflector design will change. Also, the entire stage testing will happen here and not at Mahendragiri. The launch pad will cater to all of this," Somanath said.

According to S Sivakumar, project director, NGLV, the need for the new rocket — a three-stage vehicle with a reusable first stage — comes in the wake of emerging technologies and the need to reduce launch costs, aside from the realisation that existing launch vehicles cannot meet future demands.

"Current operational vehicles cannot meet future requirements because we are targeting a 20-tonne payload capacity to Low Earth Orbit (LEO) from LVM-3's capacity of 9.2 tonnes. The target for Geostationary Transfer Orbit (GTO) is 9 tonnes compared to the current 4.3 tonnes," he said.

NGLV Recovery & Reusability

“Both are possible, but both have penalties. For example, the vehicle already has a velocity to move away from land, and you have to kill all the velocity and bring it back to the launch site; you will need a lot of fuel, which means you’ll have lower payload capability,” Somanath said.

He added: “Initially, you need to do that on land only because sea-based recovery is costly, and you won’t have such a platform available readily. Later, once you have confidence, you move to the sea and land it there. Both capabilities are there. When you do it at sea, you will get a higher payload.”

On the NGLV’s reusability, Sivakumar said that while both vertical and horizontal landing options are available, the first stage needs to have a horizontal landing or a wing-body supported vertical landing.

“Otherwise, the structural mass will be enormous,” he said in his talk on transportation vehicles on Oct 6. While the establishment of the launch pad got the National Space Commission nod at the 153rd meeting of the panel ahead of the Sept 18 Cabinet meeting, which cleared four big-ticket space projects — Chandrayaan-4, NGLV, Venus Orbiter Mission (VOM), and the establishment of the first module of India’s own space station — it will be put up before the govt by Isro for final approval.

<https://timesofindia.indiatimes.com/india/isro-to-build-3rd-launch-pad-new-gen-rocket-could-also-land-on-sea/articleshow/114027181.cms>



Tue, 08 Oct 2024

Nobel Prize in Medicine 2024: Victor Ambros and Gary Ruvkun win for discovery of microRNA

The Nobel Prize in Physiology and Medicine for the year 2024 has been awarded to scientists Victor Ambros and Gary Ruvkun for the discovery of microRNA and its role in post-transcriptional gene regulation.

MicroRNA is a fundamental principle governing how gene activity is regulated.

Announcing the decision to honour Ambros and Ruvkun, the Nobel Assembly said that their discovery is “proving to be fundamentally important for how organisms develop and function.”

The winners for medicine, chosen by the Nobel Assembly of Sweden’s Karolinska Institute medical university, receive a sum of 11 million Swedish crowns (\$1.1 million).

Like every year, the prize for Medicine is the first to be announced, with other five Nobel categories set to be revealed over the coming days.

<https://indianexpress.com/article/technology/science/nobel-prize-medicine-2024-victor-ambros-gary-ruvkun-9608193/>

Indian radio telescope at the heart of big black hole jet discovery

Tucked at a corner of Maharashtra, an Indian radio-telescope played a pivotal role behind the discovery of the biggest pair of black hole jets ever seen by astronomers, spanning 23 million light-years in total length.

Critical cosmic signals picked up by the Giant Metrewave Radio Telescope at Khodad village near Pune have aided an international team of astronomers to spot the monstrous jets, whose length is equivalent to lining up 140 Milky Way galaxies back-to-back.

“The GMRT has higher sensitivity and slightly better resolution than a European telescope initially used to survey the sky for the study. The GMRT observations were used to track the black hole jets to the origin galaxy,” Yogesh Wadadekar, a senior scientist at the National Centre for Radio Astrophysics, which runs the telescope, told Deccan Herald. No scientists from NCRA or other Indian institutes were involved in the study that made headlines last month because of its pathfinding nature.

The jet megastructure, nicknamed Porphyriion after a giant in Greek mythology, dates to a time when the universe was 6.3 billion years old. For comparison, the universe currently is 13.8 billion years old. These outflows — with a total power output equivalent to trillions of Suns — shoot out from either side of a supermassive black hole at the heart of a remote galaxy. "In the center of every major galaxy, there is a big black hole of about a million to a billion solar masses," says Martijn Oei, a postdoctoral scholar at the California Institute of Technology (Caltech) and the lead author of the study.

"It swallows stars, dust, and plasma, basically everything that comes close. But a small fraction of the material that comes close to the black hole is ejected outward in the form of such jets." The gigantic jet system is one of thousands of faint megastructures found using Europe's LOFAR (Low Frequency ARray) radio telescope. But the specifics were not known and that's where the GMRT chipped in.

Oei's team, comprising scientists from the USA and Europe, used GMRT observations to identify the host galaxy that spawns the jets. Once the host was identified, the researchers used the Keck I optical telescope in Hawaii to obtain the distance.

The team used 10 hours of GMRT observation – carried out remotely - to crack the puzzle. “Nearly 60 per cent of GMRT users are from abroad nowadays and they mostly use remote observations. The sensitivity of the telescope was enhanced following upgradation,” Wadadekar said. Conceived by veteran astrophysicist Govind Swarup and built over 12 years, the GMRT is an array of 30 antennas (each of 45 m diameter) spanning over 25 km and provides a total collecting area of

about 30,000 sq m at metre wavelengths. The telescope was commissioned in 2001 and after 15 years it went through an upgrade that enhanced its sensitivity. “The study of supermassive black hole jets in radio galaxies has been an area of research where the GMRT has made several important contributions over the last two decades. The discovery of Porphyron - published in Nature - is another achievement for the telescope,” the NCRA said in a statement.

<https://www.deccanherald.com/india/indian-radio-telescope-at-the-heart-of-big-black-hole-jet-discovery-3-3223061>

