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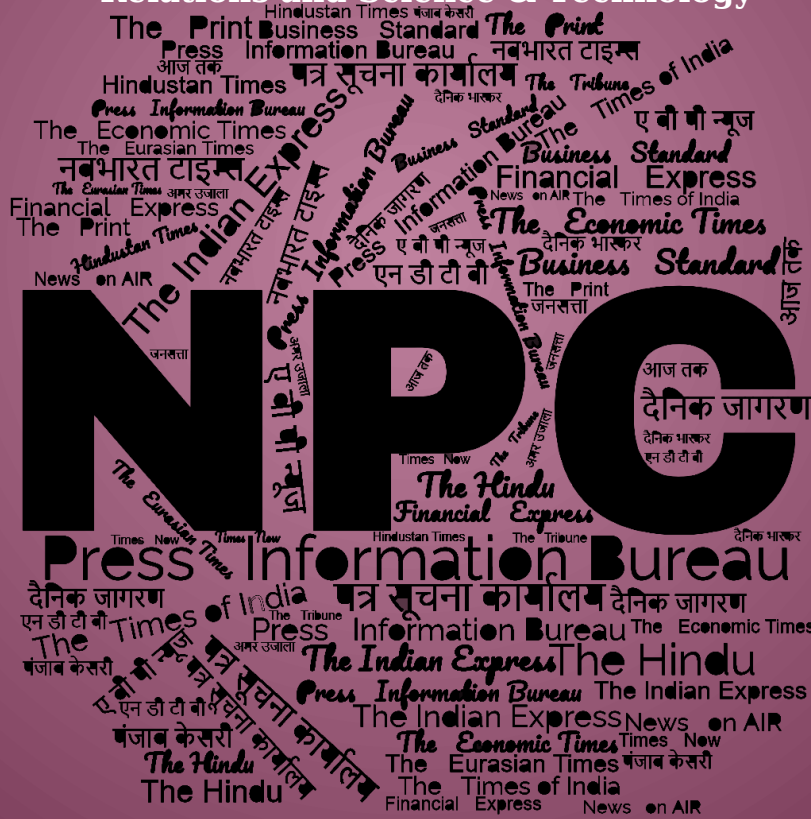
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Press Information Bureau
Government of India

Ministry of Defence

Mon, 09 Oct 2023

Annual Joint HADR Exercise 2023 – (CHAKRAVAT 2023)

The Annual Joint HADR Exercise (AJHE) is an outcome of Hon'ble PM's directive promulgated during Combined Commanders' Conference-2015. Since its first edition in 2015, the Annual Joint HADR Exercise, CHAKRAVAT, has transformed itself into a multi-agency endeavour involving participation of all three Services, Paramilitary Forces, as well as several disaster response organisations, NGOs, academic institutions and international organisations. The 2023 edition would further synergise efforts at the national level among all stakeholders, as well as witness participation from eight countries of the Indian Ocean Region.

The exercise has been conducted by Indian Army, Indian Navy (IN) and Indian Air Force (IAF) in rotation since 2016. The last edition of the exercise was conducted at Agra by IAF. The 2023 edition of the exercise is being hosted by the Indian Navy at Goa from 09 to 11 Oct 23.

Developing collective and coordinated effective response mechanisms to address humanitarian crises and natural disasters are one of the most visible elements in India's inclusive vision for the oceans - SAGAR, or Security And Growth for All in the Region. Humanitarian Assistance and Disaster Relief (HADR) operations form a key component in the Indian Navy's Benign Role, as climate change has significantly increased vulnerability of the Indian Ocean Region (IOR) to natural disasters.

The challenge posed by climate change is accentuated by the limited capacity of littoral IOR states to address this rapidly growing threat. Therefore, Indian Armed Forces have been frequently called upon to render assistance to our friends and partners in the Region, thereby, strengthening the need and our resolve to be the 'First Responder' in the region. While the three Services continue to provide relief and succour in the event of a calamity, a whole of government approach would further enhance our preparedness and response to such unfortunate events.

AJHE-23, planned over three days includes a seminar, a Table-Top Exercise and a Multi-Agency Capability Demonstration. The exercise will witness participation from various national agencies namely, National Disaster Management Authority (NDMA), National Disaster Response Force (NDRF), National Institute for Disaster Management (NIDM), Indian Army, Indian Navy, Indian Air Force, Coast Guard, Indian Metrological Department (IMD), National Remote Sensing Agencies (NRSA), State Disaster Management Agency (SDMA) and State Fire Services, Goa, District Disaster Management Agency (DDMA) of North and South, Goa, Indian National Centre for Ocean Information Services (INCOIS), Central Water Commission (CWC), Defence Research and Development Organisation (DRDO) and representatives from Federation of Indian Chambers of Commerce and Industry (FICCI) and from friendly foreign countries.

Discussions on emergent topics namely, Climate Change Adaptation and Disaster Risk Reduction: Practical Solution, Disaster Response in IOR: A Collaborative Approach, and NGO Collaboration in Disaster Reduction and Response: An Integrated Approach will be undertaken by Subject Matter Experts during the seminar planned on 09 Oct 23. An industrial display has been planned on 10 and 11 Oct 23 wherein various HADR equipment will be showcased by FICCI, Army, IN, IAF, ICG, NDRF, SDMA and NSRC. In addition, a Multi-Agency Capability Demonstration will be conducted on 11 Oct 23, which will showcase drills on rescue and relief to highlight the nuances and important lessons.

The Logo for this year's exercise depicts crests and logos of all participating agencies and flags of all nations subsumed into one single entity to signify that HADR will hinge on joint and integrated action by the all the agencies.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1965929>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 09 Oct 2023

FOCinC ENC Reviews Operational Readiness of the Eastern Fleet

Vice Adm Rajesh Pendharkar, Flag Officer Commanding-in-Chief, Eastern Naval Command reviewed the operational readiness of the Eastern Fleet at sea. He witnessed various surface, sub-surface, air and anti-air operations by ships of the Eastern Fleet under the command of Rear Adm Gurcharan Singh Flag Officer Commanding Eastern Fleet. Unalerted exercises, successful weapon firings including anti-submarine weapon firings, as well as amphibious operations were the highlights of the readiness inspection.

The C-in-C ENC embarked and interacted with the crew of participating ships and expressed his satisfaction at the combat readiness of the Eastern Fleet to tackle maritime threats in all dimensions. He also appreciated the hard work, dedication and morale of the men and women onboard ships and encouraged them to continue excelling in their roles.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1966032>

ThePrint

Mon, 09 Oct 2023

Contracts Worth Rs 18,000 Cr Inked, Army Seeks to 'Institutionalise' Emergency Procurement Powers

With the last tranche of the Emergency Procurement power (EP), given to the armed forces as an interim arrangement after the 2016 Uri attacks, getting over last week, the Army is seeking to institutionalise the scheme that helps it circumvent the long-drawn procurement process, ThePrint has learnt.

The EP was extended to all the three Services — Army, Navy and Air Force.

In the case of the Army, EP has been instrumental in the capital procurement through approximately 140 schemes, spread across four tranches (EP-I to IV), sources in the defence and security establishment said.

It helped the Army fill up critical gaps in multiple fields including fire-power, drone warfare, mobility, communication and personal protection of soldiers, among others, added sources.

As reported by ThePrint, the EP was first given to the armed forces after the 2016 Uri attack to help them circumvent the slow bureaucratic system of procurement, and under it, the services can ink contracts worth up to Rs 300 crore each on their own.

Following tension along the borders with China in 2020, the provisions were reintroduced.

The primary objective of the EP was to plug critical operational gaps, especially along the northern borders. Major upgrades facilitated through the EP mechanism encompassed remote-controlled weapon systems, air defence missiles, anti-tank missiles, satellite downlink & recording systems, very small aperture terminal (VSAT), and portable mobile terminals.

These also included secure Army mobile systems, all-terrain vehicles, high-mobility reconnaissance vehicles, radars, loitering munitions, drones, counter drone systems, high-endurance UAVs, ballistic helmets, navigation systems, and simulation systems.

The initial three tranches saw the Army utilising approximately Rs 6,500 crore, and finalising 68 contracts. Sources said this included over Rs 1,800 crore spent on modern weapons, equipment, and ammunition, besides almost an almost equivalent amount used for communication-related equipment.

About Rs 900 crore was dedicated to 10 contracts for surveillance equipment, while close to Rs 1,500 crore was allocated for 14 projects on drones and counter drone systems, and nearly Rs 1,000 crore for enhancing mobility in various terrain and engineering equipment, it is learnt.

In EP-IV alone, which spanned from September 2022 to September 2023, more than 70 schemes worth nearly 11,000 crore were inked.

“While the EP initiative has been pivotal in addressing immediate operational requirements, it’s evident that such a mechanism needs to be institutionalised for the long term,” said one source.

EP-IV expenses

Breaking down the EP-IV expenditures, sources said about 6-7 schemes for weapon systems consumed Rs 1,300 crore, while another Rs 1,300 crore was used across 7-8 projects for protective equipment.

Additionally, 9-10 schemes were allocated almost Rs 1,500 crore for intelligence, reconnaissance, and surveillance, while Rs 2,000 crore was reserved for about 10 projects focusing on drones and counter drones.

Communication-related equipment comprised about a dozen plus projects, absorbing approximately Rs 1,800 crore, sources said, adding that a significant amount of Rs 3,100 crore was used for about 25 projects on survivability and training.

Fifty percent of contracts in the first three tranches were awarded to the domestic industry.

EP-IV has concluded more than 70 schemes, amounting to close to Rs 11,000 crore, all of which are contracted with Indian vendors, it is learnt.

<https://theprint.in/defence/contracts-worth-rs-18000-cr-inked-army-seeks-to-institutionalise-emergency-procurement-powers/1795492/>

Emergency Procurements: Bolstering India's Defence Preparedness

In recent times, India's security landscape has witnessed rapid changes, demanding swift responses to address critical operational requirements. To meet these urgent needs, the government introduced the Emergency Procurement (EP) mechanism, a strategic move that accelerates the acquisition of essential equipment and technology for the defense forces. This article explores the efficiency and significance of the EP mechanism in strengthening India's military capabilities.

Efficiency of EP Mechanism:

According to sources in defence establishment the EP mechanism has played a crucial role in capital procurement through approximately 140 schemes divided into four tranches (EP I to IV).

The initial three tranches saw the Indian Army allocate nearly Rs 6500 crore for 68 contracts:

- Over Rs 1800 crore was allocated for modern weapons, equipment, and ammunition.
- A similar amount was used for communication and non-communication equipment.
- Approximately Rs 900 crore was dedicated to 10 contracts for surveillance equipment.
- Close to Rs 1500 crore was channeled into 14 projects related to drones and counter-drone systems.
- Nearly Rs 1000 crore contributed to enhancing mobility in various terrains and engineering equipment.

EP-IV, which spanned from September 2022 to September 2023, facilitated more than 70 schemes worth nearly Rs 11,000 crores, breaking down as follows:

- About Rs 1300 crores were spent on weapon systems through 6-7 schemes.
- Rs 1300 crore was utilized across 7-8 projects for protective equipment.
- 9 to 10 schemes received almost Rs 1500 crore for intelligence, reconnaissance, and surveillance.
- Rs 2000 crore was reserved for approximately 10 projects focused on drones and counter-drones.
- Communication and non-communication equipment comprised around a dozen-plus projects, absorbing approximately Rs 1800 crore.
- Lastly, a significant amount of Rs 3100 crore was used for about 25 projects related to survivability and training.

Addressing Key Areas:

“The primary objective of the EP mechanism was to fill critical operational gaps, especially along the Northern Borders,” sources quoted above explained.

Major upgrades facilitated through EP included remote control weapon systems, air defense missiles, anti-tank missiles, satellite downlink and recording systems, VSAT terminals, portable mobile terminals, secure Army mobile systems, all-terrain vehicles, high-mobility reconnaissance

vehicles, radars, loiter ammunition, drones, counter-drone systems, high-endurance UAVs, ballistic helmets, navigation systems, and simulation systems.

Promotion of Indigenous Industries:

One noteworthy aspect of the EP mechanism is its emphasis on 'Atmanirbharta' or self-reliance. Adding, "In the first three tranches, a remarkable 50% of contracts were awarded to domestic industries. EP-IV concluded more than 70 schemes, amounting to close to Rs 11,000 Crore, all contracted with Indian vendors."

Economic Prudence:

The EP mechanism isn't just about expediting procurements; it also exhibits economic intelligence. The first three tranches of EP resulted in savings of approximately Rs 550 Crore. The fourth phase alone saved around Rs 1500 crore.

The Way Forward:

While the EP initiative has played a pivotal role in addressing immediate operational requirements, it is evident that such a mechanism needs to be institutionalized for the long term. The Emergency Procurement mechanism stands as a testament to the government's commitment to bolstering the nation's defense capabilities. By addressing operational voids and promoting indigenous industries, EP emerges not merely as a procurement process but as a visionary strategy for a stronger, self-reliant India.

In a world marked by evolving security challenges, India's commitment to a robust defense framework is essential, and mechanisms like EP exemplify this resolve. Through efficient and strategic procurement, India not only strengthens its defense but also contributes to the growth of its domestic defense industry and economic stability. The future holds promise as India continues its journey toward a self-reliant and secure future.

<https://www.financialexpress.com/business/defence-emergency-procurements-bolstering-indias-defense-preparedness-3266792/>

THE TIMES OF INDIA

Tue, 10 Oct 2023

Pro-Palestine Hackers Target India, Pro-India Groups Strike Back

Palestine supporters have been attempting cyber-attacks on Indian government websites, including those of the Delhi government and AIIMS, accusing India of siding with Israel, sources said Monday, setting off a retaliatory blitz.

The Indian cyber establishment has successfully fended off attacks in the last 48 hours, most categorised as "denial of service" strikes.

After the attempted invasions into the Delhi government and AIIMS sites on Monday, cyber groups with alleged links to India escalated their offensive against Palestinian establishments and targeted the Hamas website, besides the portals of the Palestinian National Bank and the National Telecommunications Company. Sources confirmed the Hamas site was disabled for a "substantial" period of time.

These operators have also been working with pro-Israel groups like the ThreatSec, which allegedly compromised the infrastructure of Gaza-based ISP AlfaNet.

One Palestinian group, which goes by the name "Ghosts of Palestine", even invited hackers from other countries to attack the infrastructure of Israel and its allies, including India. Several other groups, including one called "Libyan Ghosts", have joined them, according to their Telegram channel.

As the Indian security establishment went on alert in the wake of the Hamas attack, cyber units upped their guard, too. The cyber wing of DRDO and CERT-IN have been tasked with thwarting attacks, officials said.

<https://timesofindia.indiatimes.com/india/pro-palestine-hackers-target-india-pro-india-groups-strike-back/articleshow/104297059.cms>



Mon, 09 Oct 2023

India, Tanzania to Expand Cooperation in Trade, Defence, Counter-Terrorism

India and Tanzania on Monday upgraded their ties to a strategic partnership as visiting Tanzanian President Samia Suluhu Hassan and Prime Minister Narendra Modi pledged to expand cooperation in areas ranging from trade and investment to defence and counter-terrorism.

Tanzania is among countries that have benefited the most from India's recent focus on Africa, where New Delhi has opened about 15 new missions. Hassan's visit comes close on the heels of a pact for setting up the first overseas campus of the Indian Institute of Technology (IIT) in Tanzania and the African Union's entry into the G20 as a full member during the summit hosted by India last month.

"Today we are transforming our age-old friendship into a strategic partnership," Modi said at a joint media interaction with Hassan, speaking in Hindi. The two countries identified new initiatives to expand cooperation in trade and investment, including a proposed agreement on increasing trade in local currencies, he said.

The two sides have also agreed on a five-year roadmap for defence cooperation that encompasses new areas such as military training, maritime cooperation, capacity building and defence industry.

"The decision by IIT-Madras to open a campus in Zanzibar is an important milestone in our relations. It will become a hub of high-quality education not only for Tanzania but for students from regional countries," Modi said, describing Tanzania as India's "largest and closest development partner in Africa".

"As countries connected to the Indian Ocean, we emphasised the need to increase mutual coordination to face challenges like maritime security, piracy and drug trafficking. We view Tanzania as a valued partner in all endeavours in the Indo-Pacific," Modi said.

India and Tanzania are unanimous that terrorism is the most serious security threat to humanity and have decided to increase cooperation in counter-terrorism, he added.

Hassan described India as "an extended family member" and said her visit is aimed at reaffirming Tanzania's commitment to deepen friendship and cooperation. Noting that India is Tanzania's third

largest trading partner, she expressed her country's gratitude for India's role in ensuring the African Union's membership of the G20, debt relief initiatives for vulnerable nations and securing finances for development of clean energy in developing states.

The two sides signed six agreements, including a technical agreement between the Indian Navy and Tanzania Shipping Agencies Corporation on sharing white shipping information, a memorandum of understanding (MoU) on sharing digital public infrastructure, and a MoU between Jawaharlal Nehru Port Authority and Tanzania Investment Centre for setting up of an industrial park in Tanzania.

India is the largest destination for Tanzania's exports and two-way trade was worth \$6.4 billion in 2022-23, including Indian exports of \$3.9 billion. India is the fifth largest investor in Tanzania with investments of \$3.7 billion, and Indian companies have executed 630 projects and created 60,000 jobs.

Dammu Ravi, secretary (economic relations), external affairs ministry, told a media briefing that India initiated the move for trade in local currencies last year and both sides have opened vostro accounts to facilitate this. "Some transactions have already happened, although it's a very small amount...about \$50 million dollars," he said, describing the move as a work in progress.

The MoU on digital public infrastructure will create an opening for Indian companies to offer services in areas such as fintech and digital payments, he said.

In the field of security, Ravi said, Tanzania has a significant interest in ensuring that shipping lines are free from piracy or interference. Modi and Hassan discussed cooperation in maritime security, especially controlling piracy, drug trafficking and terrorism, he added.

Tanzania also expressed interest in acquiring Indian defence equipment. "We have to see how we can take it forward because that requires detailing of the items and...the schedule of payments," Ravi said.

<https://www.hindustantimes.com/india-news/india-tanzania-to-expand-cooperation-in-trade-defence-counterterrorism-101696863355524.html>



Tue, 10 Oct 2023

Rajnath Singh Holds Meeting with his Italian Counterpart, Signs Agreement on Defence Cooperation

Defence Minister Rajnath Singh who is on an official visit to Italy, held a meeting with his Italian counterpart Guido Crosetto in Rome and signed an agreement on Defence cooperation between India and Italy.

Rajnath Singh who is on a two-nation visit to Italy and France, also held discussions on issues pertaining to defence corporation, including training, information sharing and maritime security.

In a social media post on 'X', Defence Minister Rajnath Singh stated, "Had a warm and productive meeting with the Italian Defence Minister Mr Guido Crosetto in Rome. We discussed a host of issues pertaining to defence cooperation which included training, information sharing and maritime security."

He further added that both nations look forward to further consolidating the defence partnership.

"An Agreement on Defence Cooperation was also signed between India and Italy. We look forward to further consolidating our defence partnership," he added.

The relationship between India and Italy was elevated to a Strategic Partnership in March 2023 during the visit of the Italian Prime Minister to India. The two countries enjoy a cordial relationship. There has been a regular exchange of visits at political and official levels between both countries.

During Rajnath Singh's first leg of his two-nation visit, he was scheduled to meet Italian Defence Minister Guido Crisetto in Rome.

Whereas, during the second and final leg, he will conduct the 5th Annual Defence Dialogue with his counterpart, French Minister of Armed Forces Sebastian Lecornu in Paris.

India and France recently celebrated 25 years of Strategic Partnership. Both countries enjoy a deep and wide-ranging bilateral defence relationship, including significant industrial cooperation.

The defence minister's visit to France comes at a time when India is looking at buying 26 Rafale M fighters from that country for the Indian Navy.

In both Rome and Paris, the minister will also interact with the defence industry CEOs and senior representatives to discuss potential opportunities for industrial cooperation.

<https://www.aninews.in/news/world/europe/rajnath-singh-holds-meeting-with-his-italian-counterpart-signs-agreement-on-defence-cooperation20231010092334/>



Mon, 09 Oct 2023

Autonomous Vehicles Co-ordinate in De-mining Exercise

A de-mining exercise involving an unmanned aerial vehicle (UAV) and two unmanned ground vehicles (UGVs) was held in Belgium in September to assess the application of artificial intelligence (AI) for improvised explosive device (IED) detection.

The exercise, supported by the European Defence Agency (EDA) and announced on 2 October, involved a quadcopter and two UGVs co-ordinating together autonomously to detect mock IEDs, including unexploded ordnance in rural and urban environments.

The EUR1.55 million (USD1.64 million) programme – Artificial Intelligence for Detection of Explosive Devices (AIDED) – was intended to demonstrate the maturity of the systems (currently TRL 3-4) and assess the application of AI for IED detection, the announcement detailed.

An EDA spokesperson was unable to disclose to James the vehicles used in the demonstration but noted that the platforms were equipped with a ground penetrating radar; RGBD (red, green, blue, depth) cameras; light detection and ranging (LIDAR); and a laser-induced breakdown spectroscopy device. Further details regarding the sensors were not provided.

While the trial was effective at demonstrating the application of AI for IED detection, soil humidity, high temperatures, and the movement of the vehicles affected the sensors' sensitivity. Autonomous navigation was also an issue, the announcement noted.

A follow-up project is expected to start in December 2023 called AIDEDex. The project is part of three other programmes that seek to determine how best to deploy autonomous vehicles, sensors, and data processing for detecting mines and IEDs, the spokesperson detailed.

<https://www.janes.com/defence-news/news-detail/autonomous-vehicles-co-ordinate-in-de-mining-exercise>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 09 Oct 2023

CSIR-National Physical Laboratory, New Delhi Organizes International Workshop on Advanced Materials and Energy Efficient Technologies to Combat with Climate Change

CSIR-National Physical Laboratory (CSIR-NPL), New Delhi is the National Measurement Institute (NMI) of India. CSIR-NPL is organizing a two days International Workshop on Advanced Materials Challenges and Standardization need for Net Zero Technologies from 9th - 10th October, 2023. Climate change is a critical concern globally and to mitigate its catastrophic impacts on the Earth's livelihood, the Intergovernmental Panel on Climate Change (IPCC) has recommended the global greenhouse emissions to be declined to net zero by 2050. This workshop aims to bring national and international experts and researchers together on the same platform to discuss about the advanced materials, technologies and standards being developed globally to achieve the net zero target and the challenges therein to combat with the global climate change. The eminent scientists and researchers across the globe are participating in this workshop and sharing their research expertise in the areas of energy generation, materials for energy storage, materials for energy efficient technologies and materials for circular economy for sustainable development.

The program began with the welcome address by Prof. Venu Gopal Achanta, Director CSIR-NPL. Prof. Achanta welcomed all the guests and participants and briefed about the workshop. He emphasized the role of CSIR labs in the development of various advanced materials and technologies for achieving the net zero target. He also mentioned that the workshop will be followed by VAMAS steering committee meeting-48 at CSIR-NPL from 11th October to 12th October, 2023.

Followed by Prof. Achanta's address, Prof. Fernando Castro, VAMAS Chair, NPL-UK addressed the participants and mentioned about the conceptualization of the Versailles Project on Advanced Materials and Standards (VAMAS) and its role in standardization of advanced materials and support to the world trade. He stressed upon the urgent need of net zero technologies to mitigate the climate change and its catastrophic impacts. He mentioned about the importance of materials metrology, accurate measurements and standard organizations need to establish standards for new materials.

The chief guest of the function Dr. N. Kalaiselvi, Secretary DSIR and Director General CSIR, addressed the gathering and mentioned about the need of advanced materials for net zero technologies. She mentioned that we need to work collectively to develop advanced materials and technologies for energy generation and storage. She mentioned about the importance of Zero for sustainable development. She said net zero is not a dream but has to be the mandate of the globe. She mentioned that advanced materials have lots of challenges and we need to take those challenges as opportunities to shape our future through a time bound process. She said we have to be very careful and justify our actions for the protection of our mother nature through collective efforts. She also mentioned about the role of CSIR-NPL in standardization and development of advanced materials and technologies for net zero emission.

The inaugural program ended with the vote of thanks by Dr. S. R. Dhakate, Chief Scientist CSIR-NPL.

The program was followed by technical sessions on Materials for Energy Generation, Energy Storage and Carbon Capture by eminent speakers from various countries. The speakers mentioned about their research contributions and efforts towards development of advanced materials and technologies for achieving net zero emission.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1966060>



Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 09 Oct 2023

Union Minister Dr Jitendra Singh Addresses the 10th " India-Sweden Innovation Day" Meet;

Calls for strengthening India-Sweden collaboration to effectively address pressing global challenges while remaining steadfast in their pursuit of immediate objectives on the path to achieving a net-zero future

Speaking on the 10th edition of the India Sweden Innovation Day, Dr Jitendra Singh said, companies from both sides must be encouraged to engage in collaborative research and the exchange of human resources

This year, nine Swedish companies made a visit to India under the India-Sweden Innovations Accelerator with the aim of enhancing export and investment prospects in the field of green technology: Dr Jitendra Singh

Addressing the 10th "India-Sweden Innovation Day" meet in New Delhi today, Union Minister of State (Independent Charge) Science & Technology, MoS PMO, Personnel, Public Grievances and Pensions, Atomic Energy and Space, Dr Jitendra Singh called for strengthening India-Sweden collaboration to effectively address pressing global challenges while remaining steadfast in the pursuit of immediate objectives on the path to achieving a net-zero future.

Speaking on behalf of the Govt of India, Dr Jitendra Singh said, companies from both sides must be encouraged to engage in collaborative research and the exchange of human resources.

Dr Jitendra Singh pointed out that this year, nine Swedish companies made a visit to India under the India-Sweden Innovations Accelerator with the aim of enhancing export and investment

prospects in the field of green technology, thereby fostering stronger ties between Sweden and India in this sector.

The Minister noted that in 2023, both the countries are commemorating the 75th anniversary of the diplomatic relations and Fifth anniversary of the Sweden-India Joint Declaration on Innovation Partnership for a Sustainable Future. He described it as a momentous occasion that serves as the guiding theme for the 10th India Sweden Innovation Day.

Dr Jitendra Singh reiterated that this milestone event is centered on harnessing our respective areas of expertise and spearheading environmentally sustainable growth, all with the aim of realizing a net-zero future.

Dr Jitendra Singh recalled that in May 2022, Prime Minister Shri Narendra Modi and Prime Minister Ms Magdalena Andersson of Sweden reiterated their dedication to fostering collaborative research and innovation across multiple domains, including polar and space research.

The Minister said, the partnership covers several areas, including smart cities, transportation and eMobility, energy, clean technologies, new materials, space, circular and bio-based economy, and health and life sciences. He also added that the India-Sweden Innovation Partnership bridges institutions, R&D intensive industries and creative entrepreneurs to address global challenges in line with the UN Sustainable Development Goals.

Dr Jitendra Singh said, recently, the Department of Science and Technology, Government of India, in collaboration with the Swedish Government Agency for Innovation Systems (VINNOVA), has announced the INDIA–SWEDEN Collaborative Industrial Research & Development call. He said, this initiative forms an integral part of the broader Sweden-India Innovation Partnership, which collectively enhance competitiveness and tackle pressing global issues such as climate change and sustainable development through innovative solutions.

Dr Jitendra Singh noted that only last year, India and Sweden announced the India-Sweden Joint call for proposals within Circular Economy. The Joint programme is co-funded by 09 Indian and Swedish funding agencies and a total of 03 major projects were supported under this call.

A Memorandum of Cooperation (MoC) was formally endorsed on March 13, 2023, forging a partnership between the Science and Engineering Research Board (SERB), Department of Science and Technology and the Swedish Foundation for International Cooperation in Research and Higher Education (STINT). This collaboration is geared towards enhancing cooperation and fostering research connections among academic institutions in India and Sweden and also to promote knowledge exchange and research advancement by facilitating seminars, workshops, and conferences.

Dr Jitendra Singh expressed his gratitude to Mr Andreas Carlson, Minister of Infrastructure, Government of Sweden for participating in the 10th edition of the India Sweden Innovation Day and said that India is ready to enhance the bilateral partnership, especially in the realm of Science & Technology, and to bolster our innovation ecosystem.

The Minister concluded by saying that the bilateral diplomatic ties have prospered due to our shared values and dedication to fair trade and globalization. It brings me great joy to see that innovation cooperation is the most rapidly expanding aspect of the bilateral relationship between India and Sweden, he added.

Ambassador of Sweden to India, Mr Jan Thesleff; Ambassador of India to Sweden, Shri Tanmaya Lal; Shri Robin Sukhia, President, Sweden-India Business Council and Shri Sanjoo Malhotra, CEO India Unlimited also gave their addresses on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1965882>

THE TIMES OF INDIA

Mon, 09 Oct 2023

ISRO Fights 100 Cyber Hacking Bids Daily: Space Agency Chief

India's space agency Isro is facing more than 100 cyber-hacking attempts on a daily basis, disclosed its chairman S Somanath on Sunday.

Speaking to TOI, Somanath said, "It is not only Isro, but several other systems (of other organisations) that face hundreds of cyber (hacking) attempts. But such attempts have been stopped by our several protection measures - both hardware and software. They are meant to protect any cyber attempt. A cyber attempt becomes an attack only when it is successful in penetrating the security system. But this has not happened. Isro has a robust security network to face such attempts. We have several firewalls and safety mechanisms. So, all these attempts are not allowed to breach beyond a point and stopped at the outer layer of our firewall itself."

Explaining the challenges in upgrading the safety mechanism of a satellite once launched, the Isro chief told TOI that a satellite is launched in space with several sets of software and hardware with a designated life of 15 years. "But after 15 years, many of them become vulnerable as the technology becomes dated. It is easy to upgrade the security system of your mobiles by upgrading their OS on a regular basis. But it is not possible to upgrade the software of a satellite in space remotely. The hardware of old generation satellites is especially vulnerable. Future satellites can be made with the latest technology but they will also become dated after some years. So it is a continuous problem."

During a cyber event in Kochi earlier, Somanath highlighted the pivotal role of artificial intelligence (AI) in shaping the future of technology, emphasising its importance in strategic and defence domains.

<https://timesofindia.indiatimes.com/india/isro-fights-100-cyber-hacking-bids-daily-space-agency-chief/articleshow/104272331.cms>

THE HINDU

Tue, 10 Oct 2023

What is Multimodal Artificial Intelligence and why is it Important?

For anyone curious about what the next frontier of AI models would look like, all the signs are pointing towards multimodal systems, where users can engage with AI in several ways. People absorb ideas and form context by drawing meaning from images, sounds, videos and text around them. A chatbot, even though it can write competent poetry and pass the U.S. bar, hardly matches up to this fullness of cognition. If AI systems are to be as close a likeness of the human mind as possible, the natural course would have to be multimodal.

A new race opens up

As another good old tech race shapes up, leading AI companies are already playing catchup. On September 25, ChatGPT-maker OpenAI announced that it had enabled its GPT-3.5 and GPT-4

models to study images and analyse them in words, while its mobile apps will have speech synthesis so that people can have full-fledged conversations with the chatbot. The Microsoft-backed company had promised multimodality in March, during the release of GPT-4 and kept the addition on the backburner. However, the company has rushed the release after a report by The Information revealed that Google's new yet-to-be-released multimodal large language model called Gemini, was already being tested in a bunch of companies.

The report also stated that Google had an easy advantage over competitors in the multimodal world because of its readily available bank of images and videos via its search engine and YouTube. But OpenAI is moving fast to make inroads. The company is actively hiring multimodal experts with pay packages up to a hefty \$3,70,000 per year. It is also reportedly working on a new project called Gobi which is expected to be a multimodal AI system from scratch, unlike the GPT models.

How does multimodality work?

Multimodality itself isn't a novel thing. The past couple of years have seen a stream of multimodal AI systems being released. Like OpenAI's text-to-image model, DALL.E, upon which ChatGPT's vision capabilities are based, is a multimodal AI model that was released in 2021. DALL.E is built on another multimodal text-to-image model called CLIP that OpenAI released the same year.

DALL.E is in fact the model which kickstarted the generative AI boom, and is underpinned with the same concept that runs other popular AI image generators like Stable Diffusion and Midjourney — linking together text and images in the training stage. The system looks for patterns in visual data that can connect with data of the image descriptions. This enables these systems to generate images according to the text prompts that users enter.

For multimodal audio systems, the training works in the same way. GPT's voice processing capabilities are based on its own open-source speech-to-text translation model, called Whisper, which was released in September last year. Whisper can recognise speech in audio and translate it into simple language text.

Applications of multimodal AI

Some of the earlier multimodal systems combined computer vision and natural language processing models or audio and text together to perform some of the simpler but rather important functions like automatic image caption generation etc. And even if these multimodal systems weren't an all-powerful model like GPT-4 gunning for the ultimate dream of artificial general intelligence (AGI), they carried enough value to address very real-world problems.

In 2020, Meta was working on a multimodal system to automatically detect hateful memes on Facebook. Meanwhile, Google researchers published a paper in 2021 about a multimodal system they had built to predict the next lines of dialogue in a video.

But there are other more complex systems still in the works. In May this year, Meta announced a new open-source AI multimodal system called ImageBind that had many modes — text, visual data, audio, temperature and movement readings. In the blog post, Meta had speculated that future multimodal models could add other sensory data to them, like “touch, speech, smell, and brain fMRI signals.”

The idea behind this is to have future AI systems cross-reference this data in similar ways that current AI systems do for text inputs. For instance, a virtual reality device in the future might be able to generate not just the visuals and the sounds of an environment but also other physical elements. A simulation of a beach could have not just the waves crashing on the shore, but also the wind blowing and the temperature there.

If that sounds too futuristic, there are other uses that can be found closer to the world we live in now, like in autonomous driving and robotics.

Other industries like medicine are “inherently multimodal,” according to a post by Google Research. Processing CT scans, or identifying rare genetic variations all need AI systems that can analyse complex datasets of images, and then respond in plain words. Google Research’s Health AI section has been working at this for some time now, having released papers around what the ideal method is to integrate multimodal AI systems in this field.

AI models that perform speech translation are another obvious segment for multimodality. Google Translate uses multiple models as do others like Meta’s SeamlessM4T model, which was released last month. The model can perform text-to-speech, speech-to-text, speech-to-speech and text-to-text translations for around 100 languages, the company said.

<https://www.thehindu.com/sci-tech/technology/what-is-multimodal-artificial-intelligence-and-why-is-it-important/article67401139.ece>

THE TIMES OF INDIA

Tue, 10 Oct 2023

I’m keen to Fly to Outer Space with Indian Crew: French Astronaut Thomas Pesquet

European Space Agency astronaut and aerospace engineer Thomas Pesquet, who flew to space twice, said here on Monday that it is his “dream to fly with an Indian astronaut to explore outer space”.

Pesquet, who is visiting India for the first time, said at the three-day Indian Space Conclave at the Sam Manekshaw Centre here, “I have a new dream, the dream to one day fly with an Indian astronaut colleague and take this cooperation into outer space, to bring back the unbelievable benefits of space exploration to our countries.”

The French astronaut, who had two six-month stays on the International Space Station (ISS) in 2016-17 and 2021, disclosed that “I’ve taken many pictures of India, I vividly remember Delhi and Bangalore at night... that I posted on social media.”

The astronaut had met PM Narendra Modi during the latter's visit to France in July. On Monday, he praised the Indian PM for giving special attention to the Indian space sector. “I was lucky enough to meet PM Modi in Paris. And we sat together for 30 minutes. And we talked about the importance of space and in particular human spaceflight, the imagination of young people... I can tell you that he recognises this very, very much. He's very much aware, and he's got big plans for the country,” the astronaut said.

Modi after his interaction with Pesquet had then tweeted, “When it comes to motivating youngsters towards science and space, Thomas Pesquet’s name figures prominently. It was a delight to meet him and exchange views on a wide range of subjects. His energy and insights are very valuable.”

Pesquet also praised Isro’s recent Chandrayaan-3 mission, saying India’s successful landing on the south pole side of the Moon has opened a window of opportunities for all. “Chandrayaan and its resounding success have opened a lot of eyes, internationally, on the capacities of the Indian people, Indian space industries and their engineers, scientists and technicians. India is now part of a very exclusive club of countries who are in orbit around Mars, who have landed on the Moon...”

Praising the upcoming Gaganyaan mission, the French astronaut, who is accompanying a huge delegation of French companies for the India-French space summit, said, “India is on the cusp of

achieving an important milestone. The Gaganyaan mission which is to send humans into space – this is extremely impressive and noticed across the world," he said.

On the Indo-French collaboration, Pesquet said, "The convergence of French and Indian leadership underscores the profound significance of space exploration. Space is playing a pivotal role in the battle against climate change, it is evident that our shared future lies among the stars. As rovers continue to pave the way for future interplanetary journeys, we find ourselves at the threshold of limitless possibilities."

About his visit to the country, the astronaut said he is very pleased to see India join the Artemis accords. "To embark on this global journey, I think it will change the world forever. Today, I'm visiting India for the first time. But I can clearly see how this won't be the last. Every long journey starts with a small step. And today we're taking this small step yet again, this is a joint step for both France and India," he said.

<https://timesofindia.indiatimes.com/india/im-keen-to-fly-to-outer-space-with-indian-crew-french-astronaut-thomas-pesquet/articleshow/104294205.cms>



Mon, 09 Oct 2023

Claudia Goldin Wins Nobel Economics Prize for ‘Advancing Understanding of Women’s Labour Market Outcomes’

The Nobel Memorial Prize in Economic Sciences, the final prize of this year’s Nobels season, was awarded to Claudia Goldin “for having advanced our understanding of women’s labour market outcomes.”

Goldin is only the third woman to win the prize, which was announced by Hans Ellegren, secretary-general of the Royal Swedish Academy of Sciences, in Stockholm.

“Understanding women’s role in the labour market is important for society. Thanks to Claudia Goldin’s groundbreaking research, we now know much more about the underlying factors and which barriers may need to be addressed in the future,” said Jakob Svensson, chair of the Committee for the Prize in Economic Sciences, according to news agency Associated Press.

Goldin does not offer solutions, but her research allows policymakers to tackle the entrenched problem, said economist Randi Hjalmarsson, a member of the prize committee. “She explains the source of the gap, and how it’s changed over time and how it varies with the stage of development. And therefore, there is no single policy,” Hjalmarsson said. “So it’s a complicated policy question because if you don’t know the underlying reason, a certain policy won’t work.”

However, “by finally understanding the problem and calling it by the right name, we will be able to pave a better route forward,” Hjalmarsson said.

Goldin had to become a data sleuth as she sought to fill in missing data for her research, Hjalmarsson said. For parts of history, systematic labor market records did not exist, and, if they did, information about women was missing.

“So how did Claudia Goldin overcome this missing data challenge? She had to be a detective to dig through the archives to find novel data sources and creative ways to use them to measure these unknowns,” Hjalmarsson said.

In Goldin's analysis, a woman's role in the job market and the pay she receives aren't influenced just by broad social and economic changes. They also are determined partly by her individual decisions about, for example, how much education to get. Often young girls make decisions about future work by looking at their own mother's participation, each generation "learning from the successes and failures of the preceding generation," Hjalmarsson said.

The process of evaluating prospects as times change "helps explain why change in labor market gender gaps has been so slow," she said.

Of receiving the Nobel, Goldin, 77, "was surprised and very, very glad," Ellegren said.

The economics award was created in 1968 by Sweden's central bank and is formally known as the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel.

Last year's winners were former Federal Reserve Chair Ben Bernanke, Douglas W. Diamond and Philip Dybvig for their research into bank failures that helped shape America's aggressive response to the 2007-2008 financial crisis.

Only two of the 92 economics laureates honoured have been women.

The prizes are handed out at awards ceremonies in December in Oslo and Stockholm. They carry a cash award of 11 million Swedish kronor (about \$1 million). Winners also receive an 18-carat gold medal and diploma.

<https://indianexpress.com/article/world/nobel-prize-economics-claudia-goldin-8974785/>

