

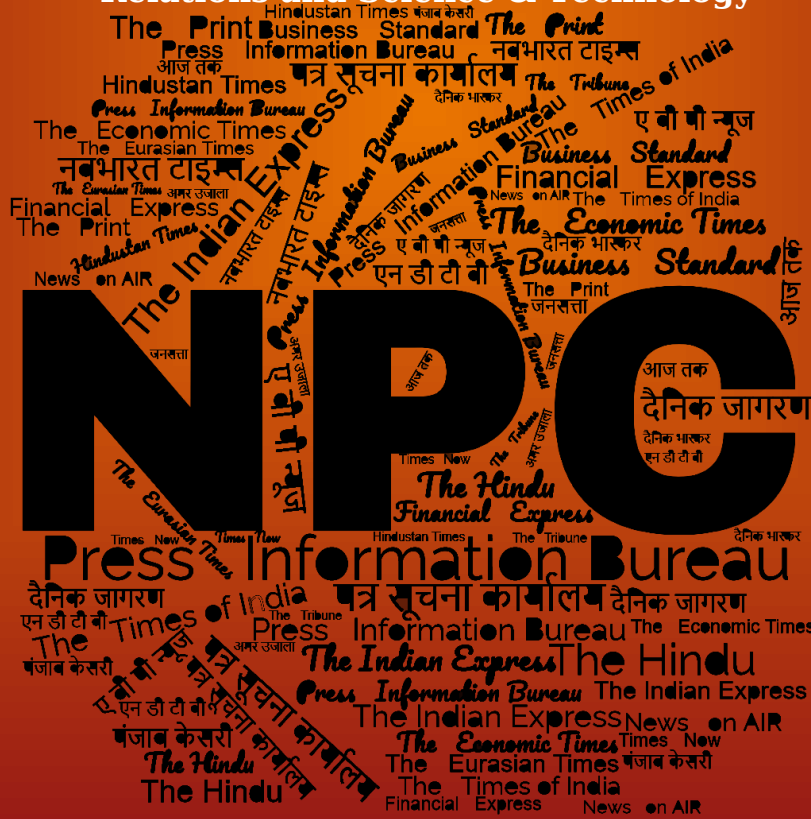
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समाचार पत्रों से चयित अंश Newspapers Clippings

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

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Indian Army के इस हथियार से थर-थर कांपेगा दुश्मन, पहाड़ हो या मैदान खत्म कर देगी 'माउंटेड तोप'

भारतीय सेना खुद को लगातार अपडेट कर रही है। सेना अपनी जरूरतों को इस प्रकार पूरा कर रही है कि उसे भविष्य के युद्ध कौशल में भी प्रयोग किया जा सके। इसमें आधुनिक हथियार से लेकर टेक्नोलॉजी भी शामिल है। अब इंडियन आर्मी ने ऐसे ही एक हथियार प्रणाली का सफल परीक्षण किया है, जो दुश्मनों को घुटने टेकने पर मजबूर कर देगा। दरअसल, डीआरडीओ ने जैसलमेर के पोखरण फील्ड फायरिंग रेंज में 'माउंटेड गन सिस्टम' का सफल परीक्षण किया है। इसे रोबोटिक तोप भी कह सकते हैं, ऐसा इसलिए क्योंकि यह तोप गोले को लोड करने के साथ दागने का काम ऑटोमैटिक ही करती है। इस तोप को इस तरह से डिजाइन किया गया है कि यह पहाड़ों के साथ मैदानों पर भी घातक साबित हो सकती है।

कुछ दिन पहले हुआ था परीक्षण

बता दें, डीआरडीओ ने कुछ दिन पहले पोखरण में 155x52 ATAGS को BEML के ऑर्मर्ड ट्रक पर लगाकर तोप का सफलतापूर्वक परीक्षण किया था। इस तोप का ट्रक 90 किमी/घंटा की अधिकतम रफ्तार से चल सकता है। बता दें, भारतीय सेना को ऐसी 800 से अधिक तोपों की आवश्यकता है। डीआरडीओ का कहना है कि यह परीक्षण भारतीय सेना के तोपखाने के आधुनिकीकरण कार्यक्रम का एक भाग है। डीआरडीओ द्वारा मिशन मोड में पूरी तरह से स्वदेशी आर्टिलरी गन सिस्टम प्रोजेक्ट है।

एक मिनट में दाग सकती है 6 गोले

भारतीय सेना की इस नई तोप में रोबोटिक आर्म लगा है। यह आर्म खुद ही गोला निकाल कर बैरल में लोड करता और फायरिंग करता है। यह तोप एक मिनट में 6 गोले दाग सकता है। इस तोप की रेंज 45 किलोमीटर बताई जा रही है। जल्द ही यह तोप भारतीय सेना में शामिल हो सकती है।

<https://www.timesnowhindi.com/india/indian-army-tested-drdo-mounted-gun-system-in-pokhran-firing-range-article-106575144>

THE TIMES OF INDIA

Robotic Artillery Mounted Gun System Tested at Pokhran Range

The central government is making efforts to provide the Indian Army with arms and ammunition under Make in India. In this series, DRDO tested a special kind of robotic artillery mounted gun system at the Pokhran field firing range in Jaisalmer district on Friday, which was successful.

This special gun of 155x52mm is like a robot. It takes the ammunition on its own and loads it. Once the trial is completed, it will be deployed at Pakistan and China borders, especially in hilly areas.

According to the information from the defence sources, a special mounted gun was tested at Pokhran field firing range. DRDO tested ATAGS by mounting it on BEML armed truck. This gun works like a robot. Earlier, it required 6-8 people to load the gun. This gun loads itself. The gun can fire five rounds in a minute.

The benefit of the mounted artillery gun is that it can locate the enemy's gun and start firing. It can also change location after firing once it is protected from enemy firing. It is an all mobility vehicle and specially made for high altitude areas. The Army is ready to include 814 mounted gun in its artillery regiment.

<https://timesofindia.indiatimes.com/city/jaipur/robotic-artillery-mounted-gun-system-tested-at-pokhran-range/articleshow/106587910.cms>



Mon, 08 Jan 2024

T.N.'s Well-established Industrial Sector is Excellent, we are Going to Focus on State, Says DRDO Chief

Tamil Nadu is going to be the focus of the Defence Research and Development Organisation (DRDO) because the State has a well-established industrial sector, which is excellent, Samir V. Kamat, Secretary, Department of Defence Research and Development, and Chairman, DRDO, said at the Global Investors Meet 2024 on Sunday.

In his keynote address at the session, 'Unlocking the potential of aerospace and defence sector through dedicated corridors', Mr. Kamat said this was the right time to enter the defence industry. Pointing out that the defence corridors that the government had established during 2016-17 were reaching maturity now, he said, "We are going to invest in both the Uttar Pradesh corridor and the Tamil Nadu corridor to set up test and simulation centres, which can help small industries that cannot afford such facilities to test the products which they develop."

The DRDO will also offer consultancy at these centres. "So, Tamil Nadu is going to be a focus area for us. We are looking at working with TIDCO [Tamil Nadu Industrial Development Corporation]. Because Tamil Nadu has a well-established industrial sector, unlike Uttar Pradesh where it will take longer for the eco-system to build up."

Mr. Kamat said the industrial infrastructure in Tamil Nadu was excellent.

"I think with a small amount of fine-tuning, the same industries which contribute so much to automobile and software can contribute significantly to the defence and aerospace sectors," he added.

Earlier, former DRDO chief S. Christopher and S. Somanath, chairman of the Indian Space Research Organisation (ISRO), were engaged in a fireside chat.

To a question by Mr. Christopher on ISRO's plans for the second spaceport at Kulasekharapatnam in Thoothukudi district, Mr. Somanath said it was not to replace Sriharikota or declutter it, but to create an alternative launch site. One of the objectives was that an industrial cluster should come up around the launch site, which would support the manufacture of components and launch of rockets

and satellites. “If you look at it in that sense, I believe that Kulasekharapatnam is apt for it. It gives you a higher payload capability. We are also looking at a lower turnaround time for launch,” he said.

<https://www.thehindu.com/news/national/tamil-nadu/tns-well-established-industrial-sector-is-excellent-we-are-going-to-focus-on-state-says-drdo-chief/article67716423.ece>



Mon, 08 Jan 2024

With Rising Use of Drones, DRDO Develops Own Counter Technology

Amidst the rising deployment of drones for surveillance, logistics support and even attack, India has developed an effective counter-technology. This is along with the multiple types of drones being developed by the Defence Research and Development Organisation (DRDO).

As per the report recently tabled by a parliamentary standing committee, the DRDO “is developing an indigenous counter-drone technology, which is capable of counter-attacks including detection, soft kill and hard kill of all types of drones.”

“The counter-drone system is ready for production and is already demonstrated to armed services and other internal security agencies,” said sources, adding, “The technology is transferred to Bharat Electronics Limited, Bengaluru, who is the production agency for the system. In addition, Transfer of Technology is given to four more Indian firms for production of anti-drone systems.”

“Anti-drone technology is where the focus should be, and in that, DRDO is working very closely with the industry. We are also doing a lot of R&D for anti-drone protection against these types of drones,” said a DRDO representative.

The work on meeting the rising demand for different types of drones is also being carried out, including micro-drones. The Medium Altitude Long Endurance (MALE) unmanned aerial vehicle TAPAS developed for ISTAR (Intelligence in Surveillance, Reconnaissance And Target Acquisition) application is in the advanced stage of developmental trials.

Short Range Armed UAV Archer is being developed for reconnaissance, surveillance and low-intensity conflict. “Developmental flight trials are under progress,” said a DRDO statement. Meanwhile, the parliamentary committee report also talks about delays in projects by the DRDO. Of the 55 projects, 23 were not completed within the stipulated time.

The DRDO secretary apprised before the committee that “as a measure, we are now hiring a consultant, who will tell us the major reasons due to which projects are getting delayed. Based on that, we will try to correct.”

In advanced stages

“The counter-drone system is ready for production and is already demonstrated to armed services and internal security agencies,” said sources. “The technology is transferred to BEL in Bengaluru, the production agency for the system. Four more Indian firms are tasked for production of anti-drone systems.”

<https://www.newindianexpress.com/nation/2024/jan/08/with-rising-use-of-drones-drdo-develops-own-counter-technology-2649006.html>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 07 Jan 2024

IDEX- DIO to Participate in the Upcoming Tenth Edition of Vibrant Gujarat Global Summit 2024

Innovations for Defence Excellence- Defence Innovation Organization (iDEX-DIO) is all set to participate in the tenth edition of the Vibrant Gujarat Summit 2024 from 10 to 12 January 2024 at Gandhinagar, Gujarat. An iDEX Pavilion is being set up based on the theme of the Summit 'Gateway to the Future', wherein the iDEX innovators will be exhibiting their futuristic technologies in the field of Unmanned Solutions, Artificial Intelligence, Cyber Security, Advance Material, etc.

The leading defence startups/MSMEs of iDEX will be showcasing their cutting-edge solutions at the Vibrant Gujarat Global Trade Show 2024 during the Global Summit. The Trade Show will spotlight 'TECHADE and Disruptive Technologies' and feature the Champion Services Sector, emphasizing Digital India initiatives, India Stack, and Emerging Technologies including Industry 4.0, Smart Manufacturing, and AI/ML, among others.

iDEX will also look forward to exploring new partnerships, and collaborations, engaging with industry leaders, policymakers, and innovators to collectively envision a future, and contributing to the vibrant economic landscape of Gujarat and beyond.

About iDEX

iDEX (Innovations for Defence Excellence), the flagship scheme of the Ministry of Defence, Govt of India launched by Prime Minister Shri Narendra Modi in 2018. The objective of the scheme is to cultivate an innovation ecosystem in the Defence and Aerospace sector by collaborating with startups, innovators, MSMEs, incubators, and academia. iDEX offers grants and support for R&D with significant potential for future adoption in Indian defence and aerospace.

It is currently engaged with around 400+ Startups and MSMEs, till now procurement of 31 items worth over Rs 2000 Cr. has been cleared. Recognized as a game-changer in the defence ecosystem, iDEX has received the PM Award for Innovation in the defence sector.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993941>



**Press Information Bureau
Government of India**

Ministry of Defence

Fri, 05 Jan 2024

Indian Navy's Swift Response to the Hijacking Attempt of MV Lila Norfolk in the North Arabian Sea

Indian Navy swiftly responded to the hijacking incident onboard Liberian flagged Bulk Carrier MV Lila Norfolk deploying considerable strength of assets (both ships and aircraft) and an aggressive intent to counter attack by pirates.

INS Chennai guided missile destroyer arrived at the scene of action by 1515h. Continuous aerial recce of MV Lila Norfolk was undertaken by MQ9B (Sea Guardian), P8I and integral helicopters. Subsequently, the Indian Navy Marine Commandos boarded MV Lila Norfolk and undertook thorough sanitisation of the upper decks, machinery compartments and living spaces. The team did not find any pirates onboard. Forceful warnings by the Indian Naval aircraft to the vessel and likely Interception by IN warship, probably compelled the pirates to escape during the night hours.

All 21 crew of MV Lila Norfolk have been rescued and are safe. Indian Naval forces are investigating the suspected vessels in the area. Presently, the crew of MV is engaged in restoring propulsion, power supply and steering gear. Thereafter, MV Lila Norfolk will recommence her passage to her destination under escort of the Indian Naval Warship.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993711>



**Press Information Bureau
Government of India**

Ministry of Defence

Fri, 05 Jan 2024

Indian Navy's Mission Deployed Platforms Respond to Hijacking Incident in the Arabian Sea

Indian Navy's Mission Deployed platforms responded swiftly to a maritime incident in Arabian Sea involving a hijacking attempt onboard Liberia Flagged bulk carrier. The vessel had sent a message on UKMTO portal indicating boarding by approximately five to six unknown armed personnel in the evening on 04 Jan 24.

Responding swiftly to the developing situation, Indian Navy launched a Maritime Patrol Aircraft (MPA) and has diverted INS Chennai deployed for Maritime Security Operations to assist the vessel.

The aircraft overflew the vessel on early morning of 05 Jan 24 and established contact with the vessel, ascertaining the Safety of the crew.

Naval aircraft continues to monitor movement and INS Chennai is closing the vessel to render assistance.

The overall situation is being closely monitored, in coordination with other agencies/ MNF in the area.

The Indian Navy remains committed to ensuring safety of merchant shipping in the region along with international partners and friendly foreign countries

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993347>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 07 Jan 2024

Raksha Mantri Shri Rajnath Singh to Visit UK and Discuss Defence & Security Issues with his Counterpart Mr Grant Shapps

Raksha Mantri Shri Rajnath Singh will leave on a two-day visit to London, United Kingdom (UK) on January 08, 2024. He will be accompanied by a high-level Ministry of Defence delegation, comprising senior officials from DRDO, Service Headquarters, Department of Defence, and Department of Defence Production.

During his visit, the Raksha Mantri will hold a bilateral meeting with his UK counterpart Secretary of State for Defence Mr Grant Shapps. They are expected to discuss a wide range of defence, security and industrial cooperation issues.

Shri Rajnath Singh is also expected to call on UK Prime Minister Mr Rishi Sunak and hold a meeting with Secretary of State for Foreign, Commonwealth & Development Affairs Mr David Cameron. He will also interact with the CEOs and industry leaders of UK Defence Industry and meet with the Indian community there.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993910>

THE ECONOMIC TIMES

Sun, 07 Jan 2024

Rajnath Singh's UK Visit First by Indian Defence Minister in 22 Years

Defence Minister Rajnath Singh is set to embark upon a three-day visit to the UK from Monday, seen as significant to the bilateral partnership in the sphere of defence and security as the last ministerial level visit took place 22 years ago. Singh's previously planned visit to the UK in June 2022 was called off by the Indian side for "protocol reasons", making next week's tour a highly anticipated one. Besides wide-ranging talks with his UK counterpart, Defence Secretary Grant Shapps, Singh is expected to inspect a ceremonial Guard of Honour and undertake visits to Mahatma Gandhi and Dr B.R. Ambedkar memorials in London. A community interaction with members of the Indian diaspora in the UK is also expected to be part of his three-day itinerary.

"This visit is significant in terms of both optics and substance. In terms of the former, this is the first visit of India's defence minister to the UK in 22 years - the last visit was by then defence minister of a previous BJP-led government, George Fernandes, to London on 22 January 2002," said Rahul Roy-Chaudhury, Senior Fellow for South and Central Asian Defence, Strategy and Diplomacy at the London-based think tank International Institute for Strategic Studies (IISS).

As a defence analyst who has been championing such a visit in his high-level discussions over the years, Roy-Chaudhury believes Singh's proposed visit next week indicates an improvement in India's political relationship and the building of trust with the UK following British Prime Minister Rishi Sunak's visit to India for the G20 Summit in September last year.

"In substantive terms, the visit will seek to deepen military cooperation and defence industrial partnerships with the UK by building on the November 2023 Defence Consultative Group (DCG) meeting in Delhi at the level of Secretaries and the inaugural meeting of the 2+2 Foreign and Defence Dialogue at the level of Joint Secretaries in October 2023," he said.

"The UK is no longer one of India's top five strategic partners. However, the resumption of a strong India-UK defence technological and industrial partnership could take place through the delivery of ongoing projects on aero-engines with Rolls-Royce; naval electric propulsion with GE (Naval) UK and Rolls-Royce; and ground-based air defence system with MBDA (UK)," he said.

"Defence Minister Rajnath Singh is likely to visit one of these arms manufacturing sites during his visit to the UK," he noted. It will be a keenly watched visit, taking place against the backdrop of ongoing Indian concerns over pro-Khalistan violence in the UK as well as some contentious legacy issues on UK defence supplies to India.

However, analysts believe with this opportunity for a dialogue at the ministerial level, the focus should be on the operationalisation of the Narendra Modi-led government's Make in India and Atmanirbhar Bharat agenda in the defence sector.

An enhanced India-UK defence partnership dates back to the April 2022 Indian visit of former prime minister Boris Johnson, who announced the creation of an Open General Export Licence (OGEL) for India which the UK government said would "reduce bureaucracy" and help in "slashing delivery times for defence procurement".

As both India and the UK prepare for a general election this year, all aspects of the relationship are in sharp focus, including sped-up negotiations towards a free trade agreement (FTA) expected to significantly enhance the GBP 36-billion bilateral partnership.

<https://economictimes.indiatimes.com/news/defence/rajnath-singhs-uk-visit-first-by-indian-defence-minister-in-22-years/articleshow/106606939.cms>

THE ECONOMIC TIMES

Sun, 07 Jan 2024

Indian Air Force's C-130 J Aircraft Achieves Milestone Night Landing at Kargil Airstrip

The Indian Air Force (IAF) reached a significant milestone with a night landing by an IAF C-130 J aircraft at the Kargil airstrip. Demonstrating prowess in challenging terrains, the mission incorporated innovative terrain masking techniques. Revealed through an official post on X by the Indian Air Force, the night landing at Kargil involved strategic terrain masking techniques during

the flight. The IAF stated, "In a first, an IAF C-130 J aircraft recently carried out a night landing at the Kargil airstrip. Employing terrain masking en route, the exercise also dovetailed with a training mission for the Garuds."

This achievement highlights the successful completion of a night landing by the Indian Air Force's C-130 J aircraft at the formidable Kargil airstrip. It showcases the IAF's preparedness and expertise, marking a significant advancement in operational efficiency in challenging terrains. The use of advanced techniques, especially terrain masking en route, underscores the air force's commitment to mastering intricate maneuvers.

This accomplishment signifies the IAF's ongoing endeavors to evolve and adapt to diverse operational scenarios, reinforcing national security across varied environments.

<https://economictimes.indiatimes.com/news/defence/indian-air-forces-c-130-j-aircraft-achieves-milestone-night-landing-at-kargil-airstrip/articleshow/106608806.cms>



Fri, 05 Jan 2024

India-US Bilateral Defence Trade has Grown to \$ 25 Billion: Larson

The United States has solidified its role as a major supplier of defence equipment to India and has emerged as its largest military exercise partner, said Jennifer Larson, Consul-General of the US Consulate in Hyderabad. Larson highlighted said the bilateral defence trade soared from nearly zero in 2008 to \$25 billion by the end of 2023.

Speaking at an event, 'Dialogues on deliverables to deliveries,' supported by the US Consulate General Kolkata and the US department of states, CUTS International, Larson underscored the close collaboration between the US and Indian governments.

Priorities in this partnership included defence cooperation, fostering mutual prosperity, countering the climate crisis, upholding a free and secure Indo-Pacific, and maintaining a rules-based order grounded in international law and respect for human rights, she said.

Reflecting on the evolving dynamics of the US-India defence partnership, Larson commended the establishment of partnerships between US aerospace companies and Indian counterparts, facilitating technology transfer and bolstering indigenous defence production capabilities. Notably, companies such as Boeing and Lockheed Martin have set up joint ventures with the Tata Group, showcasing the production capabilities and workforce in Hyderabad.

Larson highlighted the collaborative efforts to improve interoperability and expand India's access to high-end American defence technology through technical agreements. These initiatives extend beyond defence sales, aiming to enhance the overall strategic partnership. She emphasised that the Indo-Pacific region held crucial importance for both India and the United States.

Joint services cooperation was exemplified by the US-India military exercises, such as Tiger Triumph, which demonstrated effective collaboration in providing disaster relief across the Indo-Pacific region. Larson recalled that it was the December 24 tsunami that first brought together the Quad countries —Australia, India, Japan, and the United States — to take up humanitarian assistance. Larson acknowledged that perceptions of the Indo-Pacific may differ between India and

the US but emphasised ongoing efforts to enhance the definition of the region through collaboration. Larson highlighted the commitment of the Quad to advancing a positive and constructive agenda for peace and prosperity. The India-US defence partnership, in this context, had become a pillar of global peace and security, she said.

She stressed the immensity of achieving the full potential of this strategic partnership across various sectors, including health, energy, education, and security.

Larson stressed on the transformative impact this collaboration could have on the trajectory of the world, echoing the sentiments affirmed by US President Biden and Indian Prime Minister Narendra Modi in May last.

<https://www.deccanchronicle.com/nation/in-other-news/050124/india-us-bilateral-defence-trade-has-grown-to-25-billion-larson-1.html>



Fri, 05 Jan 2024

AI in Defence | A Double-edged Sword

By Gen. (Dr) M.M. Naravane (retd)

During his address to the joint session of the US Congress in June 2023, Prime Minister Narendra Modi stated that the future is AI—‘Artificial Intelligence’ and ‘America India’. At the annual board meeting of the US-India Strategic Partnership Forum in New Delhi in October 2023, both the chairman emeritus, John Chambers, and the CEO, Dr Mukesh Aghi, stressed the importance of AI in Indo-US ties. AI is the buzz that is resonating globally from government circles to boardrooms. It is going to be for the 21st century what silicon chips were for the previous century, permeating all aspects of our lives.

AI has been a topic of discussion in the defence sector for quite some time. It has the potential to revolutionise the way we approach warfare, from training and surveillance to logistics, cybersecurity, UAVs, advanced military weaponry like Lethal Autonomous Weapon Systems (LAWS), autonomous combat vehicles and robots. AI-powered military devices can handle vast amounts of data, making it easier for the armed forces to make informed decisions. However, the use of AI in the military also poses a significant risk, as it can be used to develop autonomous weapons that can operate without human intervention. The use of such weapons can lead to unintended consequences and pose a threat to human life. The use of AI in the military is a double-edged sword. It is essential to ensure that it is used responsibly. The development of AI-based weapons should be regulated to ensure that human life is not put at risk. In the field of cybersecurity, too, AI is a mixed blessing. While AI can help detect and prevent cyber attacks, it can also be used by attackers to evade detection and launch more sophisticated attacks. As with military systems, AI-based cybersecurity solutions must protect users and prevent cyber attacks, especially on sensor-shooter links and weapons platforms.

The use of AI in the military can provide multiple benefits:

Improved decision-making: AI-powered military devices can handle vast amounts of data, making it easier for the armed forces to make informed decisions.

Enhanced surveillance: AI can be used to develop advanced surveillance systems that can detect and track enemy movements and activities.

Improved logistics: It can optimise logistics and supply chain management, ensuring that the right resources are available at the right time and place.

Autonomous vehicles: AI can be used to develop autonomous combat vehicles and drones, reducing the risk to human life.

Cybersecurity: It can be used to detect and prevent cyber attacks, ensuring that sensitive military information is protected.

Improved training: AI can be used to develop advanced training systems that can simulate real-world scenarios, allowing soldiers to train in a safe and controlled environment.

Many of these benefits, like improved decision-making, logistics, training and cybersecurity, would be equally applicable in most walks of life. It is when AI is used in lethal kinetic systems that the issue becomes more complex. Ethical issues will come to the fore in ensuring that weapon systems operate in a manner consistent with humane principles and values. However, what these values should be has yet to be formulated and may even vary from country to country. Whether lethal systems should be fully autonomous or have a human in or on the loop is an equally vexatious issue. A purely managerial decision that is mostly reversible can be carried out without supervision. Launching missiles on an enemy target is a different matter altogether. If being used in a purely defensive mode, say, to strike down incoming missiles, like the Iron Dome of Israel, it could be autonomous and an acceptable use of AI.

However, much more thought will have to be given to its use against human targets. AI by itself is not foolproof and is subject to biases, inserted by accident or design. AI-based algorithms being used by many companies for recruitment or healthcare showed clear biases based on gender, race and even accent. The inadvertent inclusion of biases into military AI could be disastrous. Moreover, we have not yet reached the stage where human emotions like empathy or compassion could be factored in—an Emotional AI. AI will and must be used in military systems, especially if it is going to reduce collateral damage and shorten conflict. But once again, what constitutes acceptable collateral damage is open to interpretation, as evidenced in the conflict in Gaza. With the development of AI for military use, there is a need to have international conventions governing the use of AI on the lines of the Convention on Certain Conventional Weapons. One key feature of such a convention should be the obligation to have a human in the loop who bears the moral responsibility of the final decision. The ‘Stop Killer Robots’ campaign seeks to do just that, calling for a law to regulate the degree of freedom given to AI-backed weapon systems. India is taking significant steps to integrate AI into its armed forces. However, it must be used ethically and responsibly. At the end of the day, the taking of human life cannot be relegated to an algorithm.

<https://www.indiatoday.in/magazine/cover-story/story/20240115-gen-dr-mm-naravane-retd-on-ai-in-defence-a-double-edged-sword-2484599-2024-01-05>

THE ECONOMIC TIMES

Sun, 07 Jan 2024

Taiwan Slams Chinese Balloons as Safety Threat, Psychological Warfare

Taiwan's defence ministry accused China on Saturday of threatening aviation safety and waging psychological warfare on the island's people with a recent spate of balloons spotted near or over the island, days before key Taiwanese elections.

The potential for China to use balloons for spying became a global issue in February when the United States shot down what it said was a Chinese surveillance balloon. China said the balloon was a civilian craft that accidentally drifted astray.

Taiwan is on high alert for Chinese military and political activity ahead of the Jan. 13 presidential and parliamentary elections. It says China is exerting military and economic pressure in an attempt to interfere in the elections.

China views the island as its own territory, a claim Taiwan's government rejects.

Since last month Taiwan's defence ministry has reported several instances of Chinese balloons flying over the sensitive Taiwan Strait. It has said over the past week some balloons had flown over Taiwan island near major air bases.

In a statement on Saturday, the ministry said the balloons were a "serious threat" to international aviation safety given their flight paths.

"We also express our condemnation of the Chinese communists' disregard for aviation safety and its disregard for the safety of passengers on cross-Taiwan Strait and international flights," it said.

The ministry said its analysis was that the balloons were part of China's "grey zone" tactics against Taiwan "in an attempt to use cognitive warfare to affect the morale of our people".

This was stronger than Taiwan's previous assertions that the balloons appeared to be mostly for weather monitoring, driven by prevailing winds at this time of year.

China's Taiwan Affairs Office referred Reuters to previous comments stating that Taiwan's ruling Democratic Progressive Party (DPP) was "hyping up the threat from the mainland as the election approaches" and inciting confrontation.

China's defence ministry declined to comment on the balloons at a monthly news conference in December.

Taiwan Vice President Lai Ching-te, the DPP's presidential candidate, told a campaign event on Saturday that China was using its warships, warplanes and fake news to "divide Taiwan".

"I urge you all with your sacred votes to tell the world that Taiwan will not surrender to an authoritarian regime but will continue to choose democracy and freedom," Lai said, according to his campaign team.

STRONGER WORDING

In a separate statement on Saturday, Taiwan's defence ministry said that during the previous 24 hours it had detected two more Chinese balloons, one of which briefly flew over the far northern tip of the island. Taiwan has complained for four years of stepped-up Chinese military action such as fighter jets regularly flying over the strait as part of a "grey zone" strategy attempting to wear down Taiwan with offensive actions that stop short of full-blown conflict.

The United States, Taiwan's most important international backer and arms supplier, has watched with alarm as tensions over the semiconductor powerhouse island have risen.

Asked about the balloons at a news conference in Washington on Thursday, White House national security spokesman John Kirby said he could not comment.

"We obviously support the democracy and the democratic institutions of Taiwan, and we want to see free, fair, open, transparent elections there," he said. "And we're certainly mindful that outside actors could try to interfere." China says the Taiwan government's repeated accusations of election interference are "dirty tricks" aimed at boosting the chances of the ruling Democratic Progressive Party, which Beijing detests, calling them separatists.

A Western security source, speaking on condition of anonymity as they were not authorised to speak to the media, said China was sending a very simple pre-election message to Taiwan with the balloons.

"We are watching you closely and you can't hide," the source said.

<https://economictimes.indiatimes.com/news/defence/taiwan-slams-chinese-balloons-as-safety-threat-psychological-warfare/articleshow/106605326.cms>



Sat, 06 Jan 2024

Russia to Produce over 32,000 Drones each Year by 2030, TASS Reports

Russia plans to produce more than 32,000 drones each year by 2030 and for domestic producers to account for 70% of the market, the TASS news agency cited First Deputy Prime Minister Andrei Belousov as saying on Saturday.

Drones have been widely used by Moscow and Kyiv since Russia's February 2022 invasion of Ukraine and both sides are sharply increasing military production as the war drags on.

"The annual production volume of unmanned aerial vehicles (UAVs) - excluding educational UAVs - is planned at 32,500 units," Belousov told TASS. "This is almost three times higher than current production volumes.

"At the same time, it is planned that the share of Russian UAVs will make up 70% of the market in this type of UAV."

Moscow has been using the cheaply-produced, Iranian-made Shahed drones, known in Ukraine for their noisy petrol engines, more and more frequently in aerial assaults on Ukrainian infrastructure far behind the war's front lines in the east and south of the country.

Russia will finance the national project on UAVs with 696 billion roubles (\$7.66 billion) by 2030, Belousov said, and will publish more details this month.

Last year President Vladimir Putin said that UAVs could be used across virtually all industries, not just the military.

Russian drones initially confused Ukrainian air defences as they were harder to detect than missiles, while shooting down cheaply-made drones with expensive air defence missiles was not the most cost-effective strategy.

Ukraine, meanwhile, has intensively used FPV drones - small drones originally meant for personal civilian use but modified for the battlefield - as a cheap but effective option for reconnaissance and attacks, a tactic Russia has copied.

Ukraine said in December it planned to produce more than 11,000 medium- and long-range attack drones in 2024, as well as one million FPV (first-person-view) drones, widely in demand on the front line.

<https://www.reuters.com/world/europe/russia-produce-over-32000-drones-each-year-by-2030-tass-2024-01-06/>

'China Developing Tools to Control Foreign Satellites': Kenny Huang

By *Namrata Biji Ahuja*

Exclusive Interview/ Kenny Huang, CEO, Taiwan Network Information Centre

On December 12, representatives of India, the United States and Taiwan met in New Delhi, for closed-door discussions on the challenge of cyberattacks on democratic systems, as the three countries are holding general elections in 2024. Eric Garcetti, the US ambassador to India, said technical collaboration was essential to safeguard cyberspace in all three countries. Kenny Huang, CEO of the Taiwan Network Information Centre under the ministry of digital affairs in Taipei, has been on the job ever since. Huang is trying to cement the collaboration between the three countries to defend against a common threat factor—China's covert cyber warriors.

Being cross-strait neighbours, Taiwan holds the key to some secrets of China, not so well known to militaries in other countries. One such secret is the swift advancement of the People's Liberation Army in developing advanced cyber weapons that can 'seize control' of enemy satellites and threaten to disrupt global communication, navigation and surveillance systems. "The consequences may extend to the manipulation or disabling of crucial infrastructure, including GPS navigation, weather monitoring, communication networks and compromising military surveillance," said Huang in an exclusive interview. Excerpts:

Q What kind of cyber threat is Taiwan facing from China?

A China poses a significant cyber threat to Taiwan across its military branches. China has developed advanced cyber capabilities in the air force, navy, ground force and rocket force. These capabilities target communication systems, intelligence networks and command structures, potentially disrupting air, naval and ground operations. In the rocket force, cyber tools may aim to secure and disrupt missile defence systems. China integrates cyber capabilities into its broader military strategy, emphasising information warfare. This comprehensive approach includes both offensive cyber operations and defence against potential cyber threats. Taiwan must prioritise cyber security measures to protect against these persistent and sophisticated cyber threats from China. Enhancing defences across air, naval, ground and rocket forces is crucial for safeguarding Taiwan's military capabilities in the face of evolving cyber challenges posed by China.

Q What do you know about Unit 61398 of the PLA?

A Unit 61398 is a covert cyber unit within the PLA, suspected of participating in cyber espionage and attacks. It is situated in Shanghai's Pudong district. Specifics about the unit's strength are undisclosed because of the secretive nature of its operations. However, it reportedly consists of experts involved in hacking and technical operations.

The unit is implicated in stealing sensitive information, conducting economic espionage and launching cyberattacks with potential geopolitical consequences. One extensively reported case involves its alleged participation in cyber intrusions, notably against entities in the United States. These operations are aimed at extracting intellectual property, sensitive data and proprietary information, linking the unit to attacks on sectors like technology, defence and health care.

Q There is worry that China has the capability to jam communications and intelligence satellites.

A In case of military strikes on Taiwan, reports suggest that China might employ tactics to disrupt communication and intelligence satellites. This could involve jamming signals, rendering communication systems ineffective, and impairing intelligence-gathering capabilities. Additionally, there are concerns that China might target ballistic missile early warning satellites, which play a crucial role in detecting and tracking missile launches. These actions align with a broader strategy to disrupt the communication and surveillance infrastructure that is vital for military operations. Disabling satellites could hinder Taiwan's ability to coordinate defences, share critical information and monitor potential missile threats. As such, safeguarding satellite capabilities and developing countermeasures against potential interference would be crucial elements of Taiwan's defence strategy in the event of heightened tensions or military actions in the region.

Q What kind of chaos can be expected if China 'seizes control' of enemy satellites?

A If successful, this could disrupt global communication, navigation and surveillance systems, impacting both military and civilian operations. The consequences may extend to the manipulation or disabling of crucial infrastructure, including GPS navigation, weather monitoring and communication networks. In a worst-case scenario, these cyber capabilities could be exploited to interfere with essential services like financial transactions, air traffic control and emergency response systems. Such control over satellites could also jeopardise national security by compromising military surveillance and intelligence-gathering capabilities. This highlights the urgent need for international collaboration and robust cyber security measures to safeguard satellite infrastructure, ensuring the continued functioning of critical systems on a global scale.

Q What lessons can be drawn from the Russia-Ukraine war, the first hybrid war the world has seen?

A It teaches us valuable lessons about the effectiveness of hybrid warfare, combining traditional military actions with cyber operations and information warfare. It underscores the need to address both conventional and non-traditional threats in modern conflicts. The war showed that countries should be ready to handle a mix of military, cyber and information threats. The lessons emphasise the importance of being resilient against different kinds of challenges, such as cyberattacks and misinformation. It also highlights the need for nations to update their military strategies to adapt to the changing nature of conflicts in today's world. The Russia-Ukraine war serves as a contemporary example that prompts countries to take a more comprehensive and flexible approach to national security.

Q In what way can China discredit the democratic process?

A There is a real worry about China trying to influence Taiwan's elections either by favouring a specific party or spreading misinformation to discredit the democratic process. China's motives seem quite complex. One possibility is that China wants a party in Taiwan that aligns with its goals, like supporting reunification. By influencing the election in favour of such a party, China could advance its own interests. Another concern is that China might aim to undermine trust in the democratic process itself. This could involve spreading false information, casting doubt on the fairness of the elections, or questioning the legitimacy of candidates. The goal here is to create instability and shake people's confidence in Taiwanese politicians and the democratic system.

<https://www.theweek.in/theweek/more/2024/01/06/taiwan-network-information-centre-ceo-kenny-huang-interview.html>



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 05 Jan 2024

High-frequency Waves Detected in the Martian Upper Atmosphere could Help Understand Plasma Processes over Mars

Scientists have detected existence of high-frequency plasma waves in the Martian Upper Atmosphere with novel narrowband and broadband features that can help to understand plasma processes in the Martian plasma environment.

Various plasma waves are often observed in the Earth's magnetosphere, a magnetic field cavity around the Earth. In general, plasma waves are identified as the short-time scale fluctuations in the electric and magnetic field observations. These plasma waves play an important role in the energization and transport of the charged particles in the Earth's magnetosphere. Some of the plasma waves like electromagnetic ion cyclotron waves act as a cleaning agent for the Earth's radiation belt, which is hazardous to our satellites. Knowing this scenario, researchers are curious to understand the existence of various plasma waves in the vicinity of unmagnetized planets like Mars.

The planet Mars do not have any intrinsic magnetic field therefore the high-speed solar wind coming from the Sun interacts directly with the Mars atmosphere, like an obstacle in the flow.

The researchers at Indian Institute of Geomagnetism (IIG), an autonomous institute of Department of Science and Technology have examined the existence of high-frequency plasma waves in the Martian plasma environment by making use of the high-resolution electric field data from the Mars Atmosphere and Volatile Evolution Mission (MAVEN) spacecraft of NASA (<https://pds-ppi.igpp.ucla.edu>).

These waves could be either electron oscillations that propagate parallel to the background magnetic field (Langmuir waves) or electron oscillations that propagate perpendicular to the background magnetic field (upper-hybrid type waves) in the magnetosheath region of the Mars.

They observed two distinct wave modes with frequency below and above the electron plasma frequency in the Martian magnetosphere. These waves were observed around 5 LT (local time) on February 9, 2015, when the MAVEN spacecraft crossed the magnetopause boundary and entered the magnetosheath region. These waves are either broadband- or narrowband-type with distinguishable features in the frequency domain. The broadband waves were consistently found to have periodic patchy structures with a periodicity of 8–14 milliseconds.

Observations of such waves provide a tool to explore how electrons gain or dissipate energy in the Martian plasma environment. The physical mechanism responsible for the generation of broadband-type waves and its modulation remains unexplained and further investigation is

required. This study was carried out by IIG scientists in collaboration with scientists from Japan, USA, and UAE and it has been published in Astronomy & Astrophysics Journal.

Publication link: <https://www.aanda.org/articles/aa/pdf/2023/11/aa44756-22.pdf>

For more details, please contact Dr. Amar Kakad, email: amar.kakad@iigm.res.in, Phone: +91-22-27484188.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993601>



Press Information Bureau
Government of India

Ministry of Science & Technology

Sat, 06 Jan 2024

‘From Moonwalk to Sun Dance’, Dr Jitendra Singh Lauds Successful Insertion of Aditya-L1 to Halo Orbit

Success of Aditya L1 is going to be a path breaking effort to discover the mysteries of the Sun: Dr Jitendra Singh

From Moonwalk to Sun Dance, Aditya L1 marks ISRO's success trilogy with three success stories, one after the other, in quick succession... Chandrayaan 3, XPoSat and Aditya L1 at the Lagrange point. This was the instant first response of Union Minister for Space, Dr Jitendra Singh soon after Aditya L1 reached its designated destination at the Lagrange point.

In a tweet which went viral, the Minister said "From Moon walk to Sun Dance! What a glorious turn of year for Bharat! Under the visionary leadership of PM Narendra Modi, yet another success story scripted by Team ISRO. AdityaL1 reaches its final orbit to discover the mysteries of the Sun-Earth connection". In a series of media interviews, Minister said that the success of Aditya L1 is going to be a path breaking effort to discover the mysteries of the Sun, which were hitherto either not understood or became a part of the fairy tales and folktales.

India also has a special stake in the study of Sun phenomena because of the large number of satellites in space, said Dr Jitendra Singh. The Minister also took the example of the private space exploration company SpaceX losing 40 satellites in a go, after being hit by a solar storm a day after launch, to underline how important the understanding of solar phenomena is. Pointing out the importance of the mission, the Minister said that all scientists in the space exploration field are eagerly waiting for inputs from the Aditya L1 mission.

Dr Jitendra Singh also said that this mission will help us in understanding Solar heating, Solar storms, Solar flares and Coronal Mass Ejections among other solar phenomena.

The Minister also said that the Aditya L1 mission is not only indigenous but also a very cost effective mission, just like Chandrayaan, with a budget of only Rs. 600 Crore. Dr Jitendra Singh said that even though talent was never lacking in the country, the missing link of enabling milieu was created under the leadership of Prime Minister Narendra Modi.

The Halo Orbit insertion (HOI) of Aditya L1 was achieved at approximately 4:00 PM today. The final phase of maneuver involved firing of control engines for a short duration. The orbit of Aditya L1 spacecraft is located roughly 1.5 million Kilometres from earth on a continuously moving Sun – Earth line, with an orbital period of about 177.86 earth days. The specific halo orbit is selected to

ensure a mission lifetime of 5 years, minimizing station keeping maneuvers and thus fuel consumption and ensuring a continuous, unobstructed view of the sun.

The halo orbit insertion of the spacecraft presented a critical mission phase, which demanded precise navigation and control. The success of this insertion not only signifies ISRO's capabilities in such complex orbital maneuvers, but it gives confidence to handle future interplanetary missions. Aditya L1 was designed and realized at UR Rao Satellite Centre (URSC) with participation from various ISRO centers. The payloads onboard Aditya L1 were developed by Indian scientific laboratories, IIA, IUCA and ISRO. The Aditya L1 spacecraft was launched by PSLV-P57 on September 2, 2023. The spacecraft underwent a cruise phase lasting approximately 110 days to reach the halo orbit.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993832>



Sun, 07 Jan 2024

India Gets Bigger Halo as 'Aditya' Reaches its Final Orbit

In its maiden solar mission, ISRO successfully placed the Aditya-L1 spacecraft into its final orbit on Saturday at 4 pm.

The insertion of Aditya-L1 in the halo orbit presented a critical mission phase, which demanded precise navigation and control. A successful insertion further involved constant monitoring along with the adjustment of the spacecraft's speed and position by using onboard thrusters.

“The success of this insertion not only signifies ISRO's capabilities in such complex orbital manoeuvres but also gives confidence to handle future interplanetary missions,” ISRO said.

The satellite placed in the orbit of the Sun-Earth system, which is about 1.5 million km from Earth, has covered only 1 per cent of the distance to the Sun. It will be undertaking several studies on the impact of the Sun's radiation, solar flares, solar storms and other particles on the Earth through payloads.

CONTINUOUS VIEWING

From the L1 point, Aditya has the advantage of continuously viewing the Sun without any occultation or eclipses, ISRO scientists said. It will help observe solar activities and their effects in real-time.

<https://www.newindianexpress.com/thesundaystandard/2024/jan/07/india-gets-bigger-halo-as-aditya-reaches-its-finalorbit-2648607.html>



Fri, 05 Jan 2024

ISRO Successfully Tests Polymer Electrolyte Membrane Fuel Cell on PSLV-C58's Orbital Platform POEM3

The Indian Space Research Organisation (ISRO) has successfully tested a 100 W class Polymer Electrolyte Membrane Fuel Cell based Power System (FCPS) in its orbital platform, POEM3 which was launched onboard PSLV-C58 on January 1, 2024.

The ISRO said that the objective of the experiment was to assess Polymer Electrolyte Membrane Fuel cell operation in space and to collect data to facilitate the design of systems for future missions.

“During the short duration test onboard POEM, 180 W power was generated from Hydrogen and Oxygen gases stored onboard in high pressure vessels. It provided a wealth of data on performance of various static and dynamic systems that formed part of the power system and the physics at play,” ISRO said.

The space agency added that hydrogen fuel cells produce electricity directly from Hydrogen and Oxygen gases, along with pure water and heat. It is an electric generator which works on electrochemical principles, as in batteries, as against the combustion reactions employed in conventional generators.

“The ability to produce electricity directly from fuels without any intermediate step renders them very efficient. With water as the only byproduct, they are totally emission free. These features make them ideal candidates for space missions involving humans where electric power, water and heat are essential since a single system can meet multiple requirements in the mission,” ISRO said,

Fuel Cells also possess significant societal application potential. They are also considered to be the most appropriate solution to replace the engines of various types of vehicles in use today and to power standby power systems.

Fuel Cells can provide range and fuel recharge time equaling that of today’s conventional engine, which gives them a distinct advantage over batteries, and are expected to facilitate emission free transportation. Fuel cell is an ideal power source for the Space Station as it provides both power and pure water.

ISRO launched the PSLV-C58 X-ray Polarimeter Satellite (XPoSat) mission on January 1, 2024.

During the mission, the POEM-3 experiment was also executed to meet the objective of 10 other payloads developed .by start-ups, education institutions and ISRO centres among them is the FCPS.

The FCPS payload is significant as it has potential applications in India’s space station which is proposed to come up by 2035.

“There are some important payloads like FCPS which we will be demonstrating in the POEM phase when PS4 is used as a platform. The FCPS will have potential applications in our future like space station,” said Dr. S. Unnikrishnan Nair of the Vikram Sarabhai Space Centre (VSSC) on January 1 after the successful launch.

ISRO also said that it has qualified 10 Ah Silicon–Graphite anode based high energy density Li-ion cells as a low weight and low cost alternative to present cells being used.

The flight demonstration of the cells as a battery was successfully completed by powering a resistive load on-board the POEM-3 platform of PSLV-C58. The on-orbit voltage, current and temperature values of the battery were acquired through telemetry and found to match well with the predictions.

<https://www.thehindu.com/sci-tech/science/isro-successfully-tests-polymer-electrolyte-membrane-fuel-cell-on-pslv-c58s-orbital-platform-poem3/article67708743.ece>

How Voice Cloning through Artificial Intelligence is being Used for Scams | Explained

A few years ago, voice cloning through Artificial Intelligence (AI) was just a phenomenon of mild amusement. AI-generated songs by famous artistes like Drake and Ariana Grande were floating around online. However, fears around the AI software were realised when AI voice cloning-related scams burgeoned. In April last year, a family living in Arizona, U.S., was threatened to pay ransom for a fake kidnapping pulled off by an AI cloned voice. And scams weren't the end of it. Easy access to AI voice clones also spawned disinformation.

Earlier in January, 4chan users started flocking to free AI voice cloning tools to generate celebrity hate speech, wherein Harry Potter actress Emma Watson read out a portion of the Mein Kampf and conservative political pundit Ben Shapiro made racist comments against Democrat politician Alexandra Ocasio-Cortez.

Why is India a major target for AI voice clone scams?

Similar incidents have made their way in India. A report titled 'The Artificial Imposter' published in May last year revealed that 47% of surveyed Indians have either been a victim or knew someone who had fallen prey to an AI generated voice scam. The numbers are almost twice the global average of 25%. In fact, India topped the list with the maximum number of victims to AI voice scams. Even as several cases went unreported, some came to light. In December, a Lucknow resident fell prey to a cyberattack that used AI to impersonate the voice of the victim's relative, requesting the person to transfer a substantial amount through UPI. Another report in August stated that a man from Haryana was duped of ₹30,000 after a call was made from a scamster who used an AI app to sound like the victim's friend in dire need of money due to an accident.

Indians have been found to be particularly vulnerable to scams of this nature. According to McAfee, 66% of Indian participants admitted that they would respond to a voice call or a phone call that appeared to be from a friend or family member in urgent need of money, especially if the caller was supposedly a parent (46%), spouse (34%) or their child (12%). The report stated that messages that claimed the sender had been robbed (70%), involved in a car accident (69%), lost their phone or wallet (65%) or needed financial aid while travelling abroad (62%) were the most effective excuses.

While these tools aren't perfect, scammers have relied on creating a sense of exigency to glide over these flaws. The report also shared that 86% Indians were prone to sharing their voice data online or via voice notes at least once a week which has made these tools potent.

How are voice clones done?

Once a scammer finds an audio clip of an individual, all it takes is to upload their voice clip to the online program that is able to replicate the voice accurately barring some intonations. There's a host of these applications online with popular ones like Murf, Resemble and Speechify. While most of these providers have a monthly subscription fee from under \$15 for basic plans to \$100 for premium options, they have a free trial period.

An especially lauded one has been a year-old AI startup called ElevenLabs that was founded by former Google and Palantir employees. The Andreesen Horowitz-backed firm has been releasing a steady stream of tools. In October last year, it released a product called AI Dubbing which can translate even long-form speech into 20 different languages.

In mid-December, former Pakistani Prime Minister Imran Khan's political party used an AI-generated speech from the now imprisoned leader in an attempt to rally for votes virtually. Mr. Khan had reportedly sent his party a shorthand script from jail which was later edited and then dubbed by ElevenLabs.

Prominent tech companies also have a hand in the AI voice game now. Recently, Meta launched SeamlessM4T, an open-source multilingual foundational model that can understand nearly 100 languages from speech or text and generate translations in real-time. Apple introduced a voice cloning feature in iOS 17 intended to help people who may be in danger of losing their voice say to a degenerative disease.

ChatGPT, the poster boy for AI chatbots also has a voice transcription feature that can be used for cloning. But OpenAI has been careful to partner with specific parties to prevent the illegal use of these capabilities.

YouTube took a similar route and announced Dream Track which partners with just 100 creators in the U.S. that would allow them to create song clips featuring AI vocals with permission from pop stars like Demi Lovato, Sia and John Legend.

What can be done?

The speed and easy access of these tools have sent alarm bells ringing. In November last year, the U.S. Federal Trade Commission or FTC launched a Voice Cloning Challenge which asked the public to send in their ideas to detect, evaluate and monitor cloned devices. Just yesterday, the contest posted a prize of \$25,000 for the winner. The FTC is also considering the adoption of a recently-proposed Impersonation Rule that will help deter deceptive voice cloning.

But the pace at which generative AI releases are moving has regulators gasping for air. On January 2, researchers from Massachusetts Institute of Technology (MIT) and Tsinghua University in Beijing, China, and members of AI startup MyShell released OpenVoice, an open-source voice cloning tool that is almost instant and offers granular controls to modify one's voice that isn't found on other such platforms.

And the segment is only expected to grow exponentially. A report by Market US has revealed that the global market for these applications stands at \$1.2 billion in 2022 and is estimated to touch almost \$5 billion in 2032 with a CAGR above 15-40%.

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<https://www.thehindu.com/sci-tech/technology/how-voice-cloning-through-artificial-intelligence-is-being-used-for-scams-explained/article67716940.ece>

ISRO to Develop Indigenous Method to Certify Spacecraft

The Indian Space Research Organisation (ISRO) is currently working on an indigenous mechanism to certify its spacecraft, said ISRO chairman S Somnath on Sunday. He was speaking at a fire-side session on 'Unlocking the potential of Aerospace & Defence sector through dedicated corridors' with S Christopher, the former chairman of the Defence Research and Development Organisation (DRDO).

Unlike an aircraft, which can be certified to be safe for humans to fly, there is no such mechanism for Indian spacecraft yet, he said. "There is quite the difference between a human flying an aircraft and a human flying a spacecraft. Moreover, as an industry, we understand the demand we have today," chairman Somnath added.

Regarding the ongoing construction of a new spaceport in Kulasekarapattinam, Thoothukudi, Somnath said the facility is not meant to replace the Sriharikota spaceport, instead it will be used to carry out minor satellite launches. ISRO is looking to launch 20-30 small satellites from the new spaceport. Moreover, developing a new spaceport would result in the development of space clusters, Somnath added.

Regarding sending robots to space, the chairman said it could be done only when a robot with sensory perception gets developed. "There is no need to send a human on a space flight," he noted.

<https://www.newindianexpress.com/states/tamil-nadu/2024/jan/08/isro-to-develop-indigenous-method-to-certify-spacecraft-2648997.html>

THE TIMES OF INDIA

Indian-American Scientist Funds Award in Honour of JC Bose

Recognition and appreciation comes late to scientist and inventor Jagadish Chandra Bose, who invented the detector for wireless telegraphy. Italian inventor and engineer G Marconi used this for his historic demonstration of the first ever trans-Atlantic radio telegraphy, and was awarded the Nobel prize in Physics. Since he did not mention Bose -- without whose invention Marconi could not have won recognition and accolades -- Bose's vital contribution remained hidden. The failure to give credit to Bose has long irked scientists in India familiar with Bose's work.

Efforts to publicly acknowledge the valuable contributions of Bose began when The Institute of Electrical and Electronics Engineers (IEEE), located in New York City, placed a memorial plaque in Kolkata, at the Presidency College, now a university, where Bose came up with his ground-breaking invention. And now, with their intense lobbying and with special effort put in by Prof S V Sankaran of the Indian Institute of Science and Technology, Bengaluru, the IEEE has decided to establish a prestigious medal and award named the Jagadish Chandra Bose Medal. However, to sponsor the medal and award in perpetuity, IEEE needed to come up with one million US dollars. Mani Bhaumik has offered to donate the entire amount.

Benghal-born Mani Bhaumik, who lives in Los Angeles, holds numerous patents and is considerably wealthy; he is the inventor of the laser technology that paved the way for Lasik eye surgery. Bhaumik says he feels his domination is a way of paying back for all that he gained from his teacher and mentor, Satyendra Nath Bose of the Bose-Einstein statistics fame who was a student of J C Bose.

The president and CEO of IEEE, Saifur Rehman, will make the announcement establishing the prestigious J C Bose Medal at a congressional reception to be held on January 12 at the Rayburn building of the US Capitol. The medal will be known officially as the IEEE Jagadish Chandra Bose Medal in Wireless Communications.

It will be presented to an individual or a team of up to three and the scope will be for contributions to wireless communications technologies with a global impact. The nomination deadline is June 15. The award consists of a bronze medal, a certificate, and an honorarium.

The first award will be given in 2025.

Bhaumik says his journey from a poor family in Bengal to UCLA via IIT Kharagpur taught him how transformational education can be. And that his donations to UCLA, to IIT Kharagpur and for the Bose medal and honorarium are aimed at nurturing talent and scientific spirit.

<https://timesofindia.indiatimes.com/home/science/indian-american-scientist-funds-award-in-honour-of-jc-bose/articleshow/106603590.cms>

