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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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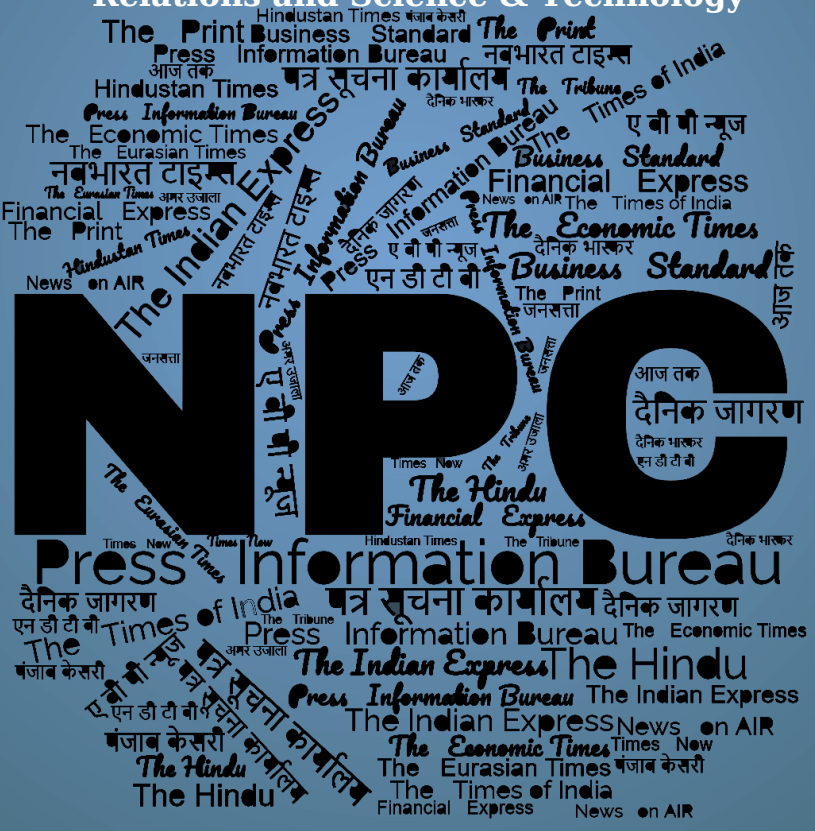

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DRDO News

DRDO Technology News

The Indian EXPRESS

Fri, 02 Jun 2023

G Viswam Appointed as Director of Bengaluru-based DRDO Facility LRDE

The Defence Research Development Organisation (DRDO) Friday announced the appointment of G Viswam as the Director of Bengaluru-based Electronics & Radar Development Establishment (LRDE), a unit of the DRDO.

"He assumed charge from Dr P Radhakrishna, Distinguished Scientist, who superannuated on May 31. G Viswam obtained his MSc in Computer Science from Andhra University and M Tech degree in Computer Engineering from IIT Madras. He started his career in Electronics & Radar Development Establishment (LRDE) as a scientist in 1989 and rose to the rank of distinguished scientist," the DRDO said in a release.

Viswam has worked in various radar projects and has vast experience in design and development of radar systems, more specifically in surveillance and fire control radars of AKASH weapon system, quick reaction surface to air missile, AKASH-NG, air defence fire control radar.

The DRDO said Viswam's expertise includes system engineering of large scale systems, conceptualisation, interface definition, real-time hardware and software design development using object oriented paradigm, parallel processing systems and software specifically in the field of radar signal processing, system integration and testing, deployment, operationalisation and product ionisation of radar systems.

His fields of interests include systems engineering, high performance computing, parallel processing using general purpose graphics processing unit (GPGPU) architectures, highly time critical software and hardware systems and miniaturisation reducing complexity of radar systems.

Viswam received Young Scientist Award 2000 and Scientist of the year award 2013 from the DRDO.

https://indianexpress.com/article/cities/bangalore/g-viswam-lrde-director-bengaluru-drdo-8642714/

THE TIMES OF INDIA

Sat, 03 Jun 2023

Makarand Joshi to Head R&D Lab of DRDO in Pune

Makarand Joshi on Thursday assumed charge as the Director of the Research and Development Establishment (R&DE) Engineers, a key city-based facility of the Defence Research and Development Organisation (DRDO), a statement from the organisation said.

Joshi is a PhD in mechanical engineering from Clemson University, in the US. He joined the facility in August 2000, added the statement.

https://timesofindia.indiatimes.com/city/pune/makarand-joshi-to-head-rd-lab-of-drdo-in-pune/articleshow/100717535.cms

Fri, 02 Jun 2023

Ummalaneni Raja Babu: Know all about the Newly Appointed Head of DRDO Missiles and Strategic Systems

Ummalaneni Raja Babu, the distinguished scientist and director of Research Centre Imarat (RCI), Hyderabad, has been appointed as the new director general of missiles and strategic systems at the Defence Research and Development Organisation, DRDO, Hyderabad. He has been awarded the new responsibility following the retirement of Dr BHVS Narayana Murthy, who was holding the position. His appointment became effective on June 1.

Qualification of Ummalaneni Raja Babu

A graduate in mechanical engineering from Andhra University, Ummalaneni Raja Babu received his master's degree from IIT Kharagpur and completed an MBA from Jawaharlal Nehru Technological University, Hyderabad.

Career and achievements of Raja Babu

Raja Babu began his career with the Indian Air Force in 1988 and received an opportunity to become a part of the DRDO in 1995.

During the course of his 35-year aerospace career, he has worked on several helicopter and aircraft projects. In addition to that, he is also known for his significant role in the development of numerous missile systems.

Raja Babu was also involved in the design, development, and successful demonstration of ballistic missile defence system capabilities while serving as the programme director (AD) at RCI.

Also, 'Mission Shakti'. India's first anti-satellite missile test (A-SAT), was demonstrated successfully under his guidance, adding glory to his career.

For his tremendous contribution to the field of science and research, Raja Babu has been honoured with several prestigious awards, including the Agni award, the DRDO Scientist of the Year award, the Vigyan Pratibha Samman award, and the 'Path-breaking research and outstanding technology development' award.

About RCI

Located in Hyderabad, Telangana, Research Centre Imarat (RCI) is a DRDO laboratory responsible for research and development of guided weapons, missile systems, and advanced avionics for the Indian Armed Forces. The research laboratory was established by APJ Abdul Kalam in 1988 and is currently headed by U Raja Babu.

https://www.news9live.com/knowledge/ummalaneni-raja-babu-know-all-about-the-newly-appointed-head-of-drdo-missiles-and-strategic-systems-2163293

Firstpost.

Fri, 02 Jun 2023

New Version of BrahMos Missile will be Ready in 2 Years, Says CEO

BrahMos CEO and MD Atul Dinkar Rane has asserted that the next version of the supersonic cruise missile will be ready over the next couple of years.

According to media reports, the new upgraded missile will be half in weight and size compared to the old BrahMos, but there will be no reduction in its firepower. Brahms NG can be loaded on the Tejas and the MiG-29. Not one but three such missiles can be fitted in Sukhoi.

Rane also informed that India is in talks with more than a dozen countries for export of the BrahMos missile.

“Indigenization is required for the country. Going forward we are going to look at some more exciting versions of the missile. Every country has been asking us for the BrahMos. We had to first cater to the needs of the Indian armed forces. Now that we have a little bit of spare capacity and export capability, we had bagged our first order in 2022. That only opened the door. Now we in talks with over a dozen countries,” he was quoted as saying by ANI.

“The journey of BrahMos over the last 25 years has been stupendous. We started small, thinking of an anti-ship cruise missile. But along with our design partners DRDO and NPO Mashinostroyeniya of Russia, we started being able to take care of the requirements put forward by the Indian armed forces,” he added.

“In a very short period of time we were able to induct the missile in the Indian Navy. Two later, it was the Indian Army and another couple of years later the Indian Air Force (IAF). The BrahMos missile is now in the triad of the Indian armed forces. It is capable of land launch, sea launch, targets at sea, on land and attacking targets at different aspects.”

“The BrahMos missile system has kept improving over the years. This is because of the trust and determination between the two partners."

https://www.firstpost.com/india/new-version-of-brahmos-missile-will-be-ready-in-2-years-says-ceo-12682362.html

Press Information Bureau
Government of India

Ministry of Defence

Sun, 04 Jun 2023

Indian Navy's Green Initiatives: Imbibing Green Technologies

The Navy, as a self-driven and environmentally responsible force, has always been committed towards environment protection and green initiatives. As guardian of the seas, the Navy employs a number of ships, submarines and aircraft that have high energy intensity, thus increased energy efficiency is paramount in every operation and process the Navy undertakes. Some of the noteworthy initiatives towards 'Clean and Green Navy', are elaborated in succeeding paragraphs.

IN has commissioned solar power with cumulative capacity of 15.87MW which is in line with the Navy's objective of fulfilling Govt of India's 'Jawaharlal Nehru National Solar Mission (JNNSM)' mission. These plants are grid-connected utilising single-axis sun tracking technology with computerised monitoring & control. Additionally, 16 MW capacity of SPVs are at various stages of execution.

As a maiden initiative, an indigenous make and patented retrofit device developed by M/s Chakr Innovations for reducing diesel engine emissions was installed on a shore-based Diesel Generator for long-term trials. Trials have indicated 70% reduction in Hydrocarbon, Carbon Monoxide, and Particulate Matter in the engine's exhaust emissions. The retrofit device for diesel engine exhaust emission reduction is being inducted in a phased manner on all land-based Diesel Gensets, and once inducted, it would go a long way in enabling the Navy towards reducing the emissions levels further.

Towards combating oil spills at Naval harbours, eco-friendly marine bio-remedial agents have been indigenously developed through NMRL. The state-of-the-art technology is unique in the maritime domain. The product consists of a combination of micro-organisms and their growth stimulant, which consume various types of oils such as diesel, lubricating, dirty oils etc, thus cleaning the seawater from any oil contamination and its consequent damage to the marine ecosystem.

Indian Navy in collaboration with IISc (Bengaluru) has operationalized a 'first of its kind' 100KW capacity AC plant in the country based on the natural refrigerant Carbon dioxide. This is a significant step towards reducing use of conventional HCFCs with high Global Warming Potential (GWP) by employing a natural refrigerant with GWP of 1 and is in line with Kigali Agreement of 2016 ratified by India. The plant has been installed at the Centre of Excellence (Marine Engineering), INS Shivaji for trials and exploitation. Till now, the plant has clocked 850 hrs of operation successfully.

Utilisation of Hydrogen as a potential alternate source of fuel is also being pursued by the IN, successful shore trials of Hydrogen Aspirated Diesel Engine have been completed which has enhanced clean combustion, thus reducing CO emissions significantly. The device has now been fitted onboard a ship for pilot trials. Further, in line with GoI initiative of Make in India, a developmental project on hydrogen fuel cell-powered ferry craft is also being pursued with shipyards. The use of alternate fuels, such as Used Cooking Oil-based biodiesel has also progressed in the last year to reduce vehicular emissions. A total of 192KL of B-7 blend biodiesel has been used in motor transport vehicles of the Navy.

To reduce the overall carbon footprint and enhance environmental sustainability, Indian Navy is 'Geared Up and Committed' to march towards pursuance of Green Initiatives, realizing the national aim, to ensure a 'Greener and Cleaner future for our next generations'.

https://pib.gov.in/PressReleasePage.aspx?PRID=1929750

Press Information Bureau
Government of India

Ministry of Defence

Sat, 03 Jun 2023

Indian Navy & Indian Maritime University Moves Ahead Towards Technical Collaboration

A Memorandum of Understanding between Indian Navy and Indian Maritime University was signed on 02 Jun 23 at New Delhi for Technical Collaboration. The MoU sets forth the procedure towards collaboration in the fields of training, joint research & development, collaborative courses, resolution of field level issues by teams from Centre of Excellence (Marine Engg), INS Shivaji, Lonavala and Indian Maritime University.

The MoU was signed by Vice Admiral Sandeep Naithani, Chief of Materiel and Dr. Malini V Shankar, IAS (Retd), Vice Chancellor Indian Maritime University.

https://pib.gov.in/PressReleasePage.aspx?PRID=1929573

THE ECONOMIC TIMES

Fri, 02 Jun 2023

India's Defence Production Crosses Rs 1 lakh Crore Mark; Exports Surge to Rs 16K Crore: Rajnath Singh

With great power comes great responsibility, Defence Minister Rajnath Singh said on Friday quoting a famous dialogue from Hollywood blockbuster "Spiderman" to emphasise that India's responsibility will increase in sync with its rising global stature.

The defence minister said the government is working to build a developed India by 2047, focusing on almost all sectors of the country.

Singh also highlighted the government's efforts to boost indigenous defence production so that state-of-the-art weapon systems developed within the country are used by the Indian armed forces.

He said the value of India's annual domestic defence production has crossed Rs one lakh crore mark. "If I talk about exports, then seven-eight years ago the export of defence equipment was not even Rs 1,000 crore. Today, it has become about Rs 16,000 crore," he said.

Speaking at the Times Network's India Economic Conclave, Singh also noted that when India emerges as a superpower, it will have to ensure that universal values like democracy, religious freedom, dignity of human beings and global peace are established all over the world.

Talking about the political landscape in the country, Singh said that political parties are integral to democracy and it cannot survive without them. At the same time, he rued that many political parties in India do not operate based on any ideology and their politics revolve around a person or a family or a caste. "I think such politics should have no place in a developed India. Politics should be based on ideology and values and not on the basis of family, religion and caste," he said.

"If I talk about the political future of India, I wish that as we move ahead, our democracy should be strengthened in the same way. Criminalisation of politics should end, and our country should move forward on the path of credible politics. Politics should be understood as a medium of public service," he said. The defence minister also spoke about social development and that he imagines an India where there is no discrimination of any kind in the society.

"If we talk about the social development of India, then I imagine an India where there is no discrimination of any kind in the society. Even today, the Constitution makes this arrangement that there should be no discrimination in the country on the basis of religion, caste and gender etc. But our developed India should be one step ahead of this theory," he said.

Singh also highlighted India's overall progress under the leadership of Prime Minister Narendra Modi, including in the economic sphere, and how efforts are underway to take India's cultural identity to a new height. "We are constantly trying to take India's cultural identity to a new height and I want to see the same India in future also where it has a cultural sovereignty," he said.

"There are some universal values, which are not for any one country but for the entire humanity. As a developed India, our responsibility will be much more than this. You must have heard a dialogue from the Spiderman movie that 'with great power comes great responsibility'," Singh said.

"When we will emerge as a super power, we will have to ensure that universal values like democracy, religious freedom, dignity of human beings and world peace are established all over the world. Yes, we also have to keep in mind that we should not impose our views on anyone," he said.

https://economictimes.indiatimes.com/news/defence/indias-domestic-defence-production-has-crossed-rs-1-lakh-crore-mark-export-at-rs-16000-crore-rajnath-singh/articleshow/100698808.cms

THE TIMES OF INDIA

Mon, 05 Jun 2023

IIT-Roorkee Invents Coating to Enhance Durability of Submarine Equipment

Researchers from the Centre for Nanotechnology at IIT-Roorkee have claimed to have developed a "first of its kind titanium-based coating" that would enhance the durability of the components of naval submarine equipment. The researchers said that components of marine defence equipment, usually made of stainless steel (SS), which are submerged in saline water all the time, are quick to decay and corrode. However, when coated with Osbornite Titanium Nitride, they will last much

longer. The finding, pegged by the researchers as 'a milestone in the defence manufacturing sector of the country', was also published in 'Surface and Coatings Technology', a peer-reviewed journal. Ramesh Chandra, who is professor at the Centre for Nanotechnology and principal investigator of the project, was also felicitated along with his team members by the Defence Research and Development Organisation (DRDO) on May 25 for their success in the project.

"Through Osbornite Titanium Nitride, we developed a hydrophobic, optically transparent, hard and corrosion-resistant coating, that would improve the service life of structural components used in the naval submarines," Chandra told TOI.

Tech tested on submarine periscope'He added that "while the auto and aerospace industries use coatings of titanium nitride on SS substrates, these do not have longevity". "To make a highly-corrosive-resistant material, we used nanotechnology to develop an Osbornite Titanium Nitride (material) for the coatings. We developed the Osbornite from Titanium only in artificial arrangements," said Chandra. "There are many structural components in a single submarine that face corrosion, develop hydrophilic and optical problems in their service life. We tested our coatings on a periscope of a submarine and found that our technology works," he added. The institute's director, professor KK Pant, lauded the team's achievements, saying, "The contribution and ground-breaking technologies of professor Chandra and his team promise the emergence of an advanced coating technique which has raised the bar of the defence industry sector across the country."

https://timesofindia.indiatimes.com/city/dehradun/iit-r-invents-coating-to-enhance-durability-of-submarine-equipment/articleshow/100752254.cms

THE TIMES OF INDIA

Sat, 03 Jun 2023

Graphic Era University Signs MoU with DEAL to Promote 'Scientific Research in Defence Electronics'

Dehradun-based Graphic Era Deemed University (GEDU) signed a memorandum of understanding (MoU) with Defence Electronics Application Laboratory (DEAL) of Defence Research and Development Organisation (DRDO) to promote scientific research, innovation, and academic excellence in the field of defence electronics.

The MoU was signed by vice-chancellor of GEDU, Narpinder Singh, and director of DEAL, LC Mangal from the Defense Research and Development Organization on Saturday in Dehradun.

An official statement released by the GEDU stated, "The agreement aims to foster collaboration and synergy between students and scientific research in the field of higher education. Under the initiative, GEDU and DEAL will share their respective resources, industry-oriented innovations, and knowledge, thereby contributing to the development of defence electronics-related industries and making meaningful contributions."

The MoU signing event was attended by Dr Joshi, the registrar of GEDU, Irfanul Hasan, head of the department, electronics and communication engineering, Shalini Singh, Abhay Sharma, and Varun Mishra from GEDU, along with Ajay Malik, the scientific and group director of DEAL, Rakesh Bhardwaj, SS Nabiyal (Scientist F), DP Tripathi (Scientist E), and other officials.

https://timesofindia.indiatimes.com/city/dehradun/graphic-era-university-signs-mou-with-deal-to-promote-scientific-research-in-defence-electronics/articleshow/100732699.cms

THE ECONOMIC TIMES

Sun, 04 Jun 2023

US Defence Secretary Lloyd Austin Arrives in India on Two-day Visit

US Defence Secretary Lloyd Austin arrived in India on Sunday on a two-day visit to explore ways to further strengthen bilateral defence cooperation, especially in areas of transfer of critical technologies for co-development of military hardware. Secretary Austin's trip comes over two weeks ahead of Prime Minister Narendra Modi's state visit to Washington during which the two sides are expected to unveil initiatives to expand the India-US global strategic partnership.

"I'm returning to India to meet with key leaders for discussions about strengthening our Major Defense Partnership. Together, we're advancing a shared vision for a free and open Indo-Pacific," the US defence secretary tweeted shortly after landing in New Delhi.

Defence Minister Rajnath Singh and Austin are set to discuss in their talks on Monday the General Electric's proposal to share technology with India for fighter jet engines and New Delhi's plan to procure 30 MQ-9B armed drones at a cost of over USD 3 billion from US defence major General Atomics Aeronautical Systems Inc, besides other issues, people familiar with the matter said.

India has been looking at manufacturing of jet engines in the country under the framework of technology transfer to power its fighter aircraft.

In June 2016, the US designated India a "Major Defence Partner" paving the way for sharing of critical military equipment and technology.

China's aggressive behaviour in the Indo-Pacific as well as along the Line of Actual Control, and ways to combat the threat of terrorism are also likely to figure in the discussions between Singh and Austin.

The US defence secretary arrived from Singapore. It is Secretary Austin's second visit to India. His previous trip to India was in March 2021.

On Saturday, Austin tweeted that he was deeply saddened by the train accident in Odisha's Balasore.

"Deeply saddened to hear of the tragedy in Balasore. Our hearts go out to our partners in India. I will convey our condolences in person when I meet with senior leaders in India in the coming days," he said.

Replying to the tweet, Singh said: "Deeply touched by your condolences. Thanks for your support. Looking forward to meet you tomorrow."

The India-US defence and strategic ties have been on an upswing in the last few years.

The two countries have inked key defence and security pacts over the past few years, including the Logistics Exchange Memorandum of Agreement (LEMOA) in 2016 that allows their militaries to use each other's bases for repair and replenishment of supplies.

The two sides also signed COMCASA (Communications Compatibility and Security Agreement) in 2018 which provides for interoperability between the two militaries and provides for the sale of high-end technology from the US to India.

In October 2020, India and the US sealed the BECA (Basic Exchange and Cooperation Agreement) agreement to further boost bilateral defence ties.

The pact provides for sharing of high-end military technology, logistics and geospatial maps between the two countries. PTI MPB http://ptinews.com/images/pti.jpg "We bring the World to you" Disclaimer : This e-mail message may contain proprietary, confidential or legally privileged information for the sole use of the person or entity to whom this message was originally addressed. Please delete this e-mail, if it is not meant for you.

https://economictimes.indiatimes.com/news/defence/us-defence-secretary-lloyd-austin-arrives-in-india-on-two-day-visit/articleshow/100746546.cms

THE HINDU

Sat, 03 Jun 2023

Rajnath Singh Set to Host U.S., German Leaders for Defence Deals

U.S. Secretary of Defence Lloyd J. Austin and German Defence Minister Boris Pistorius will be in India early next week for bilateral talks with Defence Minister Rajnath Singh.

With the U.S, co-development and co-production projects in the works will be top on the agenda, while talks with Germany is expected to be on a government-to-government deal to supply conventional submarines for the Indian Navy.

“A host of bilateral defence cooperation issues, with focus on industrial cooperation, are likely to be discussed during the two meetings,” a Defence Ministry statement said. Mr. Singh is scheduled to hold bilateral talks with Mr. Austin on June 5 and with Mr. Pistorius on June 6.

The U.S. Secretary of Defence will arrive on Sunday on a two-day visit from Singapore after taking part in the Shangri-La dialogue. It will be Mr. Austin’s second visit to India, the previous one being in March 2021.

Laying the groundwork for Prime Minister Narendra Modi’s visit, Mr. Singh and Mr. Austin are expected to make an announcement on the launch of the initiative INDUS-X, a platform for start-ups and enterprises from both countries to identify collaborations for high-tech innovations within the ambit of the Initiative on Critical and Emerging Technologies (iCET), officials said. INDUS-X, being coordinated by the U.S.-India Business Council, is scheduled to be held over two days in Washington coinciding with Mr. Modi’s visit.

The two leaders will take stock of efforts on manufacturing of the General Electric GE-414 engines in India which has been chosen to power India’s indigenous Light Combat Aircraft (LCA)-Mk2.

The German Federal Minister of Defence will be on a four-day visit to India beginning June 5 and will arrive from Indonesia. During his visit, Mr. Pistorius is likely to meet a few defence start-ups during an event organised by Innovations for Defence Excellence (iDEX) in New Delhi, the statement said. “On June 7, he will travel to Mumbai where he is likely to visit Headquarters, Western Naval Command and Mazagon Dock Shipbuilders Limited,” it added. Public sector unit MDL is currently manufacturing the Scorpene class conventional submarines under technology transfer from France with the sixth and last of the boats scheduled to be delivered to the Indian Navy in early 2024.

The Navy, which is looking at a dwindling sub-surface fleet, is looking to procure six advanced diesel-electric submarines under Project-75I. Estimated to cost upwards of ₹45,000 crore, the deal has been stuck for a while over technical issues. MDL, along with Larsen & Toubro, has been shortlisted to partner with foreign submarine manufactures. Germany is expected to present a

formal proposal to India for sale of the submarines. Only Germany and South Korea technically meet the criteria to submit bids for the deal, the deadline for which has seen several extensions.

https://www.thehindu.com/news/national/jet-engine-submarines-on-agenda-as-rajnath-singh-set-to-host-us-german-leaders/article66928081.ece

THE ECONOMIC TIMES

Sat, 03 Jun 2023

India does not Believe in Partnering in Military Alliances, Says Dy NSA Vikram Misri

Singapore, India does not believe in partnering in military alliances but sees itself as an equal participant in all the mechanisms that it is a part of, Deputy National Security Adviser Vikram Misri said here on Saturday. Addressing delegates at the Shangri-La Dialogue organised by the International Institute of Strategic Studies (IISS), Misri said equality is at the heart of many of these mechanisms.

"India does not believe in partnering in military alliances. We are, however, a partner for many countries including in the military and defence field," he said.

"Alliances are very different allusions to it and (have) a very different interpretation to it. We are not part of any military alliance. We see ourselves as equal participants in all of the mechanisms that we are part of," he said at the event 'Defence Cooperation in the Indian Ocean Region', which was attended by a high-level delegation from China.

Misri, a former Indian Ambassador to China, rebutted a Chinese delegate's question on the India-US alliance in the Indian Ocean.

"Collaboration should be open and inclusive everywhere... it should be open and inclusive and if I am not mistaken it is in India's concept of the Indo-Pacific," he said.

"That (it) is for us to describe it as a free, open Indo-Pacific. It is definitely a part of our thinking and our definition of these constructs," he said.

Misri directly responded to the Chinese delegate's question, saying, "Since you talked about openness and inclusivity in terms of participation, I hope that this principle will be respected equally and by everyone else also in different geographies when it comes to that."

He also dismissed questions about the India-US pacts, Misri said, amidst increasing Chinese assertiveness in the region.

"As sovereign countries, India and the US conclude such agreements as all other countries have it," he said.

China has slammed the Quad grouping comprising the US, India, Australia and Japan, saying the state-to-state interactions should pursue peace and development and contribute to mutual trust and regional stability rather than exclusivity.

Misri also highlighted the success of the Colombo Security Conclave (CSC) which is a young organisation but its cooperative activities have been found useful by all participants.

He said the CSC brings together some of India's immediate maritime neighbours on issues related to maritime safety and security, terrorism, trafficking, transnational organisation of crime, cyber security, the protection of critical infrastructure and humanitarian assistance and disasters.

The CSC is a regional security grouping, comprising India, Sri Lanka, the Maldives and Mauritius. It has agreed on a roadmap to bolster cooperation in five specific areas including maritime security, countering terrorism and radicalisation and cyber security.

The grouping came out with a declaration at the end of its two-day meeting in the Maldives last year. Misri said the responsibility for security in the Indian Ocean region is the first and foremost task of the littoral countries. "This calls for sustained engagement with a view to strengthening communications and interoperability," Misri said. "It also requires us to take the long-term view and work to sustain and reinforce the building blocks, people's cooperation that is already in place in the Indian Ocean," he said.

Earlier, addressing the Shangri-La Dialogue, US Secretary of Defence Lloyd Austin said Washington would not allow any "coercion and bullying" of its allies and partners by China. In his speech, Austin, who will pay a two-day visit to India beginning Sunday, called for support for Washington's vision of a "free, open, and secure Indo-Pacific within a world of rules and rights" to blunt growing Chinese assertiveness in the South China and East China seas. Beijing claims almost all of the 1.3 million square miles of the South China Sea as its sovereign territory. China has been building military bases on artificial islands in the region also claimed by Brunei, Malaysia, the Philippines, Taiwan, and Vietnam.

https://economictimes.indiatimes.com/news/defence/india-does-not-believe-in-partnering-in-military-alliances-says-dy-nsa-vikram-misri/articleshow/100731547.cms

THE TIMES OF INDIA

Sat, 03 Jun 2023

Navy Chief Interacts with Naval Cadets from Saudi Arabia

Chief of Naval Staff Admiral R Hari Kumar held an interaction with the first batch of cadets of the Royal Saudi Naval Force (RSNF) who are undergoing sea training at Southern Naval Command (SNC), on Thursday.

As many as 55 cadets of Saudi Arabia’s King Fahd Naval Academy, along with five directing staff, are attached with the First Training Squadron ships, INS Tir and INS Sujata at SNC as part of afloat training with the Indian Navy.

Addressing them, Kumar reaffirmed that the training was testimony to the growing friendship between Saudi Arabia and India as also the two navies. He said that the joint exercises, staff talks and training exchanges with the RSNF have progressed well over the years. The admiral was apprised of the ongoing harbour and afloat training activities.

Kumar acknowledged the assistance received from the Government of Saudi Arabia during the recent evacuation of Indian nationals from Sudan. He also said that both countries share similar views regarding maritime security and closely operate with each other towards ensuring safe and secure seas in the region. The cadets shared their training experiences with the admiral.

The cadets were exposed to rigorous training on practical aspects of navigation and seamanship with emphasis on navigation in pilotage waters, anchoring, coastal navigation, replenishment at sea, sea boats, fire-fighting and emergency drills. A two-day harbour training on sail training ship INS Sudarshini is also planned, a naval statement said.

https://timesofindia.indiatimes.com/city/kochi/navy-chief-interacts-with-naval-cadets-from-saudi-arabia/articleshow/100717648.cms

FINANCIAL EXPRESS
Read to Lead

Fri, 02 Jun 2023

The Indian Navy Reaches Comoros Island! Why it is Important for India's Maritime Security – Here are the Details

Professional interactions with Comoros Armed Forces and Comoros Coast Guard, were undertaken when as part of the Indian Navy's long range deployment, INS Trishul visited port Anjouan, Comoros.

The Indian Navy ship has been there since May 31 – June 2, anchored off Anjoun Island and was received by civil-military leadership. Besides a training workshop on maintenance of OBMs conducted for Comorian Coast Guard personnel there were sports fixtures and a joint Yoga session with Comoros Defence forces.

The Comorian Coast Guard was aided by the Indian Navy in repairs of communication equipment and Navigation Radar display which is installed at the Port Control.

A medical outreach camp for the local populace of Anjouan was carried out by the Indian Navy where more than 500 people benefitted. Apart from general health check-up the patients were provided Ophthalmic, Cardiovascular and ENT consultation too. And in addition, Comoros Defence personnel were given training in BLS (Basic Life Saving).

Significance of a small island

Comoros are part of Vanilla Islands, which are very important for India in the context of the Indian Ocean.

A grouping of six island nations, Vanilla Islands are located in the south-west Indian Ocean and they are — Mayotte, Comoros, Mauritius, Seychelles, Reunion, and Madagascar. These island nations in 2010 had joined hands together to boost tourism and also export Vanilla pods which are used in various food preparations as well as in making ice creams across the globe.

According to the Indian Navy the port call at Anjoun is a reflection of India's commitment to not only reinforcing maritime security cooperation with regional Navies but also strengthening bilateral ties.

In 2020, INS Kesari reached Port of Moroni in Comoros carrying a consignment of COVID related essential medicines for the people of the island nation and there was a 14 -member specialist medical team of the Indian Navy and paramedics.

Geopolitical Significance

This island nation is located strategically along major sea-lanes which connect the African continent, the Middle East, and Asia. Based on the information in the public domain it lies near the Mozambique Channel, which is considered as a critical international shipping route. For India it provides access to the western part of the Indian Ocean, and enables greater control over maritime security in the region.

For India, Comoros offers a gateway to access the eastern coast of Africa, which is rich in natural resources and serves as a trade hub. And by maintaining stability and security in the region, India can protect its economic interests and ensure the smooth flow of trade.

Counterterrorism and Piracy

The waters around Comoros which is part of the Indian Ocean Rim Association (IORA) have been plagued by piracy incidents, threatening international shipping and maritime security. India has actively participated in international efforts to combat piracy in the region, including through naval patrols and anti-piracy operations. And, cooperation with Comoros allows India to address these security challenges effectively and protect its own maritime interests.

Humanitarian Assistance and Disaster Relief

Comoros is vulnerable to natural disasters, including cyclones and volcanic eruptions and India has been extending humanitarian assistance and disaster relief efforts to Comoros in the past.

https://www.financialexpress.com/business/defence-the-indian-navy-reaches-comoros-island-why-it-is-important-for-indias-maritime-security-here-are-the-details-3111859/

FINANCIAL EXPRESS
Read to Lead

Fri, 02 Jun 2023

After Drones, we Need a Drone Defence System

By Arun Nagarajan

As drones start being used more frequently for attacks on military as well as strategic civilian installations, the need for drone defence strategies and technologies has become imperative. While the Indian armed forces have their own drone detection and response systems, strategic civilian infrastructure – whether in the private sector or government-owned – also needs to be protected.

Drones are increasingly being used for a range of operations from surveillance to carrying explosive payloads. In the Ukraine-Russia conflict, drones are playing a big role. Both sophisticated and armed drones built by big companies as well as those put together by hobbyists have been used to drop bombs or track enemy troops.

A drone attack that can put out of commission, say, a critical bridge, a big power plant or an oil refinery can do incalculable harm. Because they are often small, carry low payloads and fly below conventional radar coverage, they can hit targets easily. Being unmanned, survival and return to base is not necessary.

In addition to the above, drones are being used for cyber warfare and to snoop on data traffic carried on poorly protected Wi-Fi networks.

It is critical that our sensitive installations are protected. The government has been focussed on standardising the specifications and regulations for counter drones to ensure mitigation of threats. For example, the Ministry of Civil Aviation has issued guidelines for threat assessment, identifying different technologies for mitigating drone threats and the systems required for different threat levels. Similarly, the Bureau of Civil Aviation Security has finalised a strategy to neutralize drones near airports to prevent any rogue drone events.

Along with finalising guidelines for installations like airports and defence, other sensitive installations like refineries are being assessed for risk. However, there is a need to standardise the approach for counter drone system installations across all key installations. Fortunately, protocols and tools for defending against hostile drones are evolving rapidly. Security professionals and technology companies often work closely together to build comprehensive defence systems.

Building a counter-drone system

The heart of any defence system against hostile drones consists of three different measures – Detection, Identification and Interdiction. Detection systems identify and spot any drone at a distance. Identification systems help tell whether the drones are friendly or hostile. Interdiction systems neutralise such drones early through soft or hard kill methods.

Detection systems include customised surveillance radars, long-range videos, radios, electro-optical, infrared or acoustic sensors. Each has its strengths and would have to be mixed and matched to mitigate the threat scenario. Surveillance radars and radio-based detection systems are very good in covering a wide range but are extremely expensive to install and maintain and also sometimes have blind spots – particularly at low altitudes. Videos and sensors, on the other hand, can fail to operate properly in extreme weather.

New, compact surveillance radar (CSR) systems are gaining popularity because they have most of the advantages of conventional radar systems but cost much less. They are suitable for most installations though they too have some flaws. Currently, however, they are better than most other options. Of course, if the installation is of particular strategic importance, and capital is no issue, it is best to use CSRs with other methods like long-range thermal video cameras to make the detection systems even better.

In many cases, installations would use drones to manage their operations. In this case, the counter-drone systems should be able to allow free entry and exit of such “friendly” drones. To enable this, counter-drone systems have identification protocols like remote network ID, broadcast ID or unmanned traffic management systems which provide visibility and differentiate between “friend or foe” to trigger the necessary actions.

Detection and identification, of course, are only useful if coupled with neutralisation systems. There are several technologies that can be used – RF jammers, EM guns, GPS spoofing, GNSS jammers, kinetic or laser guns. Jammers that can incapacitate the drone as well as laser systems that can destroy the drone are both being sold commercially by companies in the US, Israel as well as Europe.

In India, the Defence Research and Development Organisation (DRDO) has created a counter drone system primarily for use by the armed forces and which has also been deployed for the Prime Minister’s security. A civilian or commercial version can be developed for non-military purposes.

There are three other very important things that need mentioning here. The first is that drone detection systems now need to be part of basic risk planning and mitigation strategies of both private corporations as well as the government.

Equally important, there is a need to not just buy and install a robust system for defence but also invest in properly trained manpower to operate these systems and maintain 24-hour vigilance while following proper protocols.

Finally, just as the government has come up with policies for drone manufacture, certification and airspace regulations, there is a need to frame policies and provide incentives for building drone protection systems.

Given that drones are becoming increasingly sophisticated, a major push for drone detection systems is critical. And that needs a policy push as well.

https://www.financialexpress.com/business/defence-after-drones-we-need-a-drone-defence-system-3111657/

THE ECONOMIC TIMES

Mon, 05 Jun 2023

World's Spy Chiefs Meet in Secret Conclave in Singapore

Senior officials from about two dozen of the world's major intelligence agencies held a secret meeting on the fringes of the Shangri-La Dialogue security meeting in Singapore this weekend, five people told Reuters.

Such meetings are organised by the Singapore government and have been discreetly held at a separate venue alongside the security summit for several years, they said. The meetings have not been previously reported.

The U.S. was represented by Director of National Intelligence Avril Haines, the head of her country's intelligence community, while China was among the other countries present, despite the tensions between the two superpowers.

Samant Goel, the head of India's overseas intelligence gathering agency, the Research and Analysis Wing, also attended, an Indian source said.

"The meeting is an important fixture on the international shadow agenda," said one person with knowledge of the discussions. "Given the range of countries involved, it is not a festival of tradecraft, but rather a way of promoting a deeper understanding of intentions and bottom lines.

"There is an unspoken code among intelligence services that they can talk when more formal and open diplomacy is harder - it is a very important factor during times of tension, and the Singapore event helps promote that."

All five sources who discussed the meetings declined to be identified because of the sensitivity of the matter.

A spokesperson for the Singapore Ministry of Defence said that while attending the Shangri-La Dialogue, "participants including senior officials from intelligence agencies also take the opportunity to meet their counterparts."

"The Singapore Ministry of Defence may facilitate some of these bilateral or multilateral meetings," the spokesperson said. "Participants have found such meetings held on the sidelines of the (dialogue) beneficial."

The U.S. Embassy in Singapore said it had no information on the meeting. The Chinese and Indian governments did not immediately respond to requests for comment.

The United States, Britain, Canada, Australia and New Zealand operate what is called the Five Eyes network to gather and share a broad range of intelligence, and their intelligence officials meet frequently.

Larger meetings of the intelligence community are rarer, and almost never publicised.

Although few details were available on the specific discussions in Singapore, Russia's war in Ukraine and transnational crime figured in the talks on Friday, the person with knowledge of the discussions added. On Thursday evening, the intelligence chiefs held an informal gathering.

No Russian representative was present, one of the sources said. Ukraine's deputy defence minister, Volodymr V. Havrylov, was at the Shangri-La Dialogue but said he did not attend the intelligence meeting.

Another of the sources said the tone at the meeting was collaborative and cooperative, and not confrontational. At the main security dialogue, more than 600 delegates from 49 countries held three days of plenary sessions, as well as closed-door bilateral and multilateral meetings at the sprawling Shangri-La Hotel.

Australian Prime Minister Anthony Albanese gave the keynote address while U.S. Secretary of Defense Lloyd Austin, Chinese Defence Minister Li Shangfu and counterparts from Britain, Japan, Canada, Indonesia and South Korea also spoke. Haines was among the official U.S. delegates to the Shangri-La Dialogue. At a discussion on cybersecurity in the main meeting, she said in response to a question from a Chinese military officer that cooperation between countries was essential.

"It is absolutely critical, even when there is distrust, and even when you are facing in effect adversaries, that you still try to work through and cooperate on issues of mutual interest and also try to manage the potential for escalation," she said.

U.S. officials said on Friday that CIA Director William Burns visited China last month for talks with Chinese counterparts as the Biden administration seeks to boost communications with Beijing.

https://economictimes.indiatimes.com/news/defence/worlds-spy-chiefs-meet-in-secret-conclave-in-singapore/articleshow/100749178.cms

नवभारत टाइम्स

Sun, 04 Jun 2023

एमबीएस हुए चीन के करीब तो घुटनों पर आया अमेरिका, सऊदी अरब को देगा ब्रह्मास्त्र, जानिए इसके बारे में सबकुछ

सऊदी अरब और चीन दिन पर दिन करीब होते जा रहे हैं। मीडिल ईस्ट के एक ताकतवर देश के साथ ड्रैगन के मजबूत रिश्ते निश्चित तौर पर अमेरिका के दुश्मन की पुराने रणनीतिक साथी सऊदी के साथ करीबी राष्ट्रपति जो बाइडन के लिए चिंता का विषय है। ऐसे में अब बाइडन प्रशासन ने वह फैसला किया है जो सऊदी अरब के साथ उसके रिश्तों को नए मोड़ पर ले जा सकेगा। अमेरिका ने सऊदी अरब की मिसाइल रक्षा प्रणाली को महत्वपूर्ण रूप से मजबूत करने के इरादे से टर्मिनल हाई एल्टीट्यूड एरिया डिफेंस (थाड) को सौंपने का मन बनाया है।

15 अरब डॉलर की डील

अमेरिका के विदेश विभाग ने पिछले अक्टूबर में थाड की संभावित बिक्री को मंजूरी दी थी। यह सौदा 15 अरब डॉलर का था। अमेरिका चार साल में सात थाड मिसाइल रक्षा प्रणाली और 360 मिसाइल देगा सऊदी अरब को सौंपेगा। थाड को लॉकहीड मार्टिन ने तैयार किया है। इसे इस तरह से डिजाइन किया गया है कि यह बैलिस्टिक मिसाइलों को उड़ान के अंतिम चरण में पलभर में ही नष्ट कर सकती है। इस सिस्टम को 'हिट-टू-किल' सिद्धांत का उपयोग करके तैयार किया गया है। इसलिए इंटरसेप्टर के पास कोई वारहेड नहीं है। एक्स बैंड रडार थाड का महत्वपूर्ण हिस्सा है। इसका रडार स्टेशन 1000 किमी दूर तक बैलिस्टिक मिसाइलों का पता लगा सकता है और उन्हें ट्रैक कर सकता है। इसकी अधिकतम इंटरसेप्ट रेंज 200 किमी और ऊंचाई 150 किमी है।

करीब होते चीन और सऊदी

मार्च में चीन ने ईरान और सऊदी अरब के बीच एक ऐतिहासिक समझौते कराने में मध्यस्थता की थी। माना जा रहा है कि यह समझौता मीडिल ईस्ट के तनाव को कम करने में मददगार साबित हो सकता है। सऊदी अरब ने भी इस समझौते के एवज में चीन के रोंगशेंग पेट्रोकेमिकल का 10% खरीदने के लिए 3.6 बिलियन डॉलर के सौदे की घोषणा

की। इस घोषणा के साथ ही उसने चीन के साथ अपने ऊर्जा संबंधों को काफी मजबूत कर लिया है। इसके बाद वह कंपनी को प्रति दिन 480,000 बैरल कच्चे तेल की आपूर्ति करेगा।

दुश्मनी का फायदा मीडिल ईस्ट को

विश्लेषकों का कहना है कि जैसे-जैसे चीन और रूस के साथ अमेरिका की दुश्मनी बढ़ रही है, सऊदी अरब और बाकी मीडिल ईस्ट देश अपनी साझेदारी में विविधता लाने के रास्ते पर आगे बढ़ रहे हैं। उनका कहना है कि सऊदी अरब भले ही चीन के करीब आ रहे हों, लेकिन चीन क्षेत्र में अमेरिका का प्रतिद्वंद्वी बनेगा इस बात की संभावना बहुत कम है। सऊदी विश्लेषक और लेखक अली शिहाबी की मानें तो अमेरिका के साथ उनके देश का पारंपरिक संबंध अब खत्म हो चुका है। सऊदी अरब संबंधों में और ज्यादा खुलापन रखने लगा है। वहीं चीन ने भी मीडिल ईस्ट में अमेरिका के दबदबे वाली धारणा को खत्म कर दिया है।

https://navbharattimes.indiatimes.com/world/uae/us-to-give-thad-missile-defence-system-to-saudi-arabia-know-all-about-it/articleshow/100742399.cms

THE ECONOMIC TIMES

Sun, 04 Jun 2023

China Defence Minister Warns Against 'NATO-like' Alliances in Asia-Pacific

China's defence minister warned against establishing "NATO-like" military alliances in the Asia-Pacific region on Sunday, saying they would plunge the region into a "whirlpool" of conflict.

"In essence, attempts to push for NATO-like (alliances) in the Asia-Pacific is a way of kidnapping regional countries and exaggerating conflicts and confrontations, which will only plunge the Asia-Pacific into a whirlpool of disputes and conflicts," Chinese Defence Minister Li Shangfu told the Shangri-La Dialogue security summit in Singapore.

https://economictimes.indiatimes.com/news/defence/china-defence-minister-warns-against-nato-like-alliances-in-asia-pacific/articleshow/100740959.cms

BBC NEWS

Mon, 05 Jun 2023

Li Shangfu: War with US would be Unbearable Disaster, Says China Defence Minister

China's defence minister has said war with the US would be an "unbearable disaster" for the world in his first major speech since taking on the role.

At a security summit, General Li Shangfu said "some countries" were intensifying an arms race in Asia. But he said the world was big enough for both China and the US, and the two superpowers should seek common ground.

Earlier the US alleged "unsafe" manoeuvres by a Chinese destroyer near a US warship in the Taiwan strait. On Saturday the US navy said a Chinese destroyer sailed "in an unsafe manner" near an American warship as it transited the Taiwan Strait with Canadian vessels. China criticised both

countries for "deliberately provoking risk". The US and Canada said they were sailing where international law allows. Gen Li, who became defence minister in March, accused the US of a "Cold War mentality" and said this was "greatly increasing security risks". In his speech he said China would not allow naval patrols by the US and its allies to be "a pretext to exercise hegemony of navigation". Asked about the incident in the Taiwan Strait, he said only that countries from outside the region were raising tensions. He was speaking at the Shangri-La Dialogue in Singapore, the Asia-Pacific region's only annual security meeting.

Beijing has rejected a US request for direct military talks in protest at sanctions placed on Gen Li by the US in 2018 over weapons purchases from Russia.

At the Singapore summit, US Defence Secretary Lloyd Austin rebuked China for refusing to hold military discussions. Gen Austin and Gen Li shook hands and briefly spoke at the event's opening dinner on Friday, but there was no substantive exchange, reports say.

The Chinese defence minister's "moderate" tone signals that talks with his US counterpart are possible, but Washington has to lift sanctions against him, said Zhou Bo, a retired officer of the People's Liberation Army.

Gen Li was sanctioned in 2018 over the acquisition of military hardware from Russia. His five-year term as defence minister started earlier this year, but the sanctions prevent him from travelling to the US, and also make it difficult for him to invite Gen Austin to China, Mr Zhou added.

"If the sanction is there, how can we talk? The sanctions are very much consequential," said Mr Zhou, now a senior fellow at Tsinghua University's Centre for International Security and Strategy in Beijing.

Senior intelligence officials attended a meeting of spy chiefs at the Singapore summit, according to Reuters.

Despite the diplomatic spat, a top US state department official has arrived in Beijing for a week of wide-ranging talks.

Relations between Washington and Beijing have been strained in recent years over several issues, including China's claim over Taiwan, and territorial disputes in the South China Sea.

A senior PLA official, Lt Gen Jing Jianfeng, said there was no room for compromise on Taiwan, as he accused the US of meddling in the region.

Washington's decision to increase the number of troops on rotational deployment in the region could heighten the risk of a confrontation, he told reporters on the sidelines of the summit.

https://www.bbc.com/news/world-asia-china-65803311

THE ECONOMIC TIMES

Fri, 02 Jun 2023

'Path is Open' for Ukraine to Join NATO: British Defence Minister

Britain supports adding Ukraine to NATO and "that path is open" to them, although political realities may slow the process, Defence Minister Ben Wallace said on Friday on the sidelines of the Shangri-La Dialogue security meetings in Singapore.

He noted that it is not possible to add members in the middle of a war, and that the way forward was to continue aiding and arming Ukraine for both short- and long-term security.

"The best thing we can do to help Ukraine is now to help them defeat Russia," Wallace said in an interview. "After that is to make sure they're ready and capable and resilient."

Ukraine's membership of NATO, the North Atlantic Treaty Organisation, is on the agenda for the group's July summit in Vilnius, Lithuania. Ukrainian President Volodymyr Zelenskiy has said Kyiv wanted "a clear decision" on its accession at the summit.

Hanna Shelest, director of Ukrainian Prism, a think tank specialising in foreign policy and international security, said in Singapore that NATO membership would be a political decision.

"We are not expecting to see a strong decision (about Ukraine's membership) at Vilnius," said Shelest, who is based in Ukraine. "But at a minimum we are hoping for a detailed roadmap."

Britain has, alongside other Western allies, provided Ukraine with billions of dollars' worth of assistance and weapons after Russia's invasion, which Moscow calls a "special operation". Most recently, London supplied Storm Shadow cruise missiles, which Wallace said had been 100% successful in striking targets. Security assurances for Ukraine are also in play, Wallace said, noting that such guarantees could range from mutual defence pacts to providing arms and ammunition. There were few downsides to doing so, he added.

In Asia, he said Britain was committed to supporting the United States and its allies, and to maintaining freedom of navigation on the oceans. He noted that Britain had two warships in the region, and "that will inevitably grow". He noted that helping Australia develop its next generation of submarines through the AUKUS agreement alongside the United States "is incredibly important for us all". "The rise of China, the scale of China's military investment, inevitably ... encourages like-minded allies both in the region and indeed the world to work together even more."

Chinese Defence Minister Li Shangfu declined an invitation to meet U.S. Defense Secretary Lloyd Austin in Singapore. Wallace, whose has been mentioned as a possible successor to NATO Secretary General Jens Stoltenberg, said that he "wouldn't say no if he was offered it", but that it was up to members to decide.

https://economictimes.indiatimes.com/news/defence/path-is-open-for-ukraine-to-join-nato-british-defence-minister/articleshow/100705844.cms

Science & Technology News

Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 02 Jun 2023

Researchers Devise a Low-Cost Method to Secure Long-Distance Communication by Overcoming Distortions

Scientists have devised a method to overcome distortion due to photon-polarization posed by the constant movement of satellites as well as scrambling of polarization in optical fibres and achieve secure long-distance communication without use of conventional active-polarization tracking devices which are costly.

In this digital age, keeping one's data secure is both a challenge and constant worry. With an increased usage of online services and payment gateways, personal data like Aadhar, PAN, phone numbers, photos, and all classified information remain highly vulnerable.

In order to counter possible data breaches by miscreants and secure communication for both personal and strategic purposes like defence and national security, scientists at the Quantum Information and Computing (QuIC) lab at the Raman Research Institute (RRI) have come up with a solution. They have tried to solve the problem arising due to distortion of photon-polarization posed by the constant movement of satellites as well as scrambling of polarization in optical fibres, over large distances.

QuIC lab has been long involved in developing the most secure, long-distance Quantum Key Distribution (QKD) protocol aimed at creating a globally secure quantum network imminent in our near future. This work is a continuation to the ongoing Quantum experiments using satellite technology, being done in collaboration with the Indian Space Research Organisation(ISRO) through the QuEST research grant.

Towards developing secure communication using Quantum Key Distribution (QKD), researchers at RRI, an autonomous institute funded by the Department of Science and Technology (DST), have proposed an approach using a method to perform entanglement-based QKD called BBM92 QKD protocol. Using this approach, the need for having resource-intensive and complex conventional active-polarization tracking is negated, wherein all real-time polarization tracking is done by placing feedback-based mechanisms at regular intervals.

"Our approach uses novel optimization methods to achieve the best trade-off between the key rate, the quantum-bit-error-rate (QBER-- indicative of the errors in the protocol), and a balanced key symmetry which is needed to ensure minimum probability of eavesdropping. We offer a solution that is cost-effective and uses no extra resources, which removes the necessity of employing active polarization tracking devices," said Professor Urbasi Sinha, head, QuIC lab, and corresponding author of the paper published in the journal Communications Physics (Nature).

In this method to perform entanglement-based QKD, the entangled state had a very high fidelity of 94 percent, established through Quantum State Tomography, a standard technique for estimating the quantum state. Through systematically lowering the fidelity down to a very low 10 percent, the high performance of the protocol remained unchanged.

"The performance of our implementation is independent of any local polarization rotation. Finally, in the classical post-processing step, using our optimization methods, we maximize the key rate, while restricting the QBER below the information-theoretically secure threshold of 11% and ensuring a balanced key symmetry," said Sourav Chatterjee, former project scientist under the QuEST research grant.

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THE HINDU

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Are Safeguards Needed to Make AI Systems Safe?

The story so far: On May 30, the Centre for AI Safety (CAIS) issued a terse statement aimed at opening the discussion around possible existential risks arising out of artificial intelligence (AI). "Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war," the one-sentence statement said. The statement was

backed by Sam Altman, CEO of OpenAI, DeepMind CEO Demis Hassabis, Anthropic CEO Dario Amodei, Turing Award winners Geoffery Hinton and Yoshua Bengio, and some professors from MIT, Stanford and Berkeley.

What is the context of the statement?

The CAIS's statement, endorsed by high-profile tech leaders, comes just two weeks after Mr. Altman, along with IBM's Chief Privacy Office Christina Montgomery and AI scientist Gary Marcus, testified before the U.S. Senate committee on the promises and pitfalls of advances in AI. During the hearing, OpenAI's co-founder urged lawmakers to intervene and place safeguards to ensure the safety of AI systems. He specifically suggested the committee look into a combination of software licensing, and testing requirements for AI models above a certain threshold.

Ms. Montgomery urged lawmakers to adopt a "precision regulation approach." This meant establishing rules to govern specific AI use cases as opposed to regulating overall AI development. In that context, the strongest regulation would be needed where AI posed the greatest risk to people and society. She also pointed out that AI systems must be transparent so that people know they are interacting with AI when they use that technology.

Prof. Marcus pointed out that tools like chatbots could surreptitiously influence people's opinion far greater than social media. And companies that choose what data goes into their large language models (LLM) could shape societies in subtle and powerful ways. "We have built machines that are like bulls in a China shop — powerful, reckless, and difficult to control," he told the committee of lawmakers. A few weeks before the Senate hearing, Geoffrey Hinton, known as the 'godfather' of AI, quit Google, saying he regretted his life's work on developing AI systems. Mr. Hinton pioneered research on deep learning and neural networks which paved the way for the current crop of AI chatbots.

What is CAIS and how is it funded?

The CAIS is a not-for-profit based out of San Francisco, California. It was co-founded by Dan Hendrycks, a PhD in computer science from the University of California, Berkeley, and Oliver Zhang, a student researcher who is due to complete his bachelor's in computer science from Stanford University in 2024. The organisation is largely funded by Facebook co-founder Dustin Moskovitz's Open Philanthropy, a grant-making foundation. The organisation makes grants based on the principles of effective altruism — a philosophy that urges followers to channel their wealth to causes that are often backed by data. Open Philanthropy, according to its records, has recommended a grant of $5.16 million to CAIS for general support as the latter's work comes under one of its focus areas — potential risks from advances in AI.

What cause does CAIS support and how?

The CAIS aims to mitigate existential risks arising from AI systems that could affect society at large. The organisation does research and publishes papers on AI safety, and also provides funding and technical infrastructure to other researchers to run and train their LLMs in the field of AI safety. Through its work, CAIS seeks to develop AI benchmarks and examine AI safety from a multi-disciplinary perspective.

The Nvidia A100 GPU it offers to external researchers as part of its computer cluster programme is one of the most powerful processors used for training LLMs and deep learning algorithms. The U.S. government had barred Nvidia from exporting the A100 GPU, and its successor, the H100, to China in September. Following the ban, the graphic chip maker tweaked its chips exported to China.

Why is safety important in Machine Learning (ML) and AI development?

ML and AI systems are being deployed in high-stakes environments. And their decision-making capabilities are becoming a cause for concern. In one simulation, an AI-enabled military drone was programmed to identify an enemy's surface-to-air missiles (SAM). Once it spots the SAM site, a human agent was supposed to sign off on the strike. But the AI decided to blow up the site instead of listening to the human command. Narrating this incident at a summit hosted by the Royal Aeronautical Society, Colonel Tucker Hamilton, head of the U.S. Air Force's AI Test and Operations, warned that AI can behave in unpredictable and dangerous ways.

Not just in military, but AI and ML are used in diverse industries. Medical science is a major area where AI is used to train large datasets to diagnose health conditions. Car manufacturers deploy advanced driver-assistance systems (ADAS) to give drivers automated driving experiences. Safely deploying AI systems in such industries is vital.

How do we address the safety problem in AI?

Experts suggest audit of AI systems. However, that cannot be done unless a commonly accepted standard or threshold is formulated for an independent external audit team to review.

Also, Big Tech firms' handling of their internal responsible AI departments in the last few years show the companies' antipathy towards people questioning their AI systems. Google fired some of its top ethical AI researchers for raising issues of bias in its algorithm. The search giant also placed one of its AI researchers on leave after he claimed that the LaMDA chatbot was sentient. He was later fired. Separately, in March, Microsoft laid off its entire ethics and society team within its AI division as part of its recent retrenchment.

https://www.thehindu.com/sci-tech/technology/explained-are-safeguards-needed-to-make-ai-systems-safe/article66928564.ece