

मार्च

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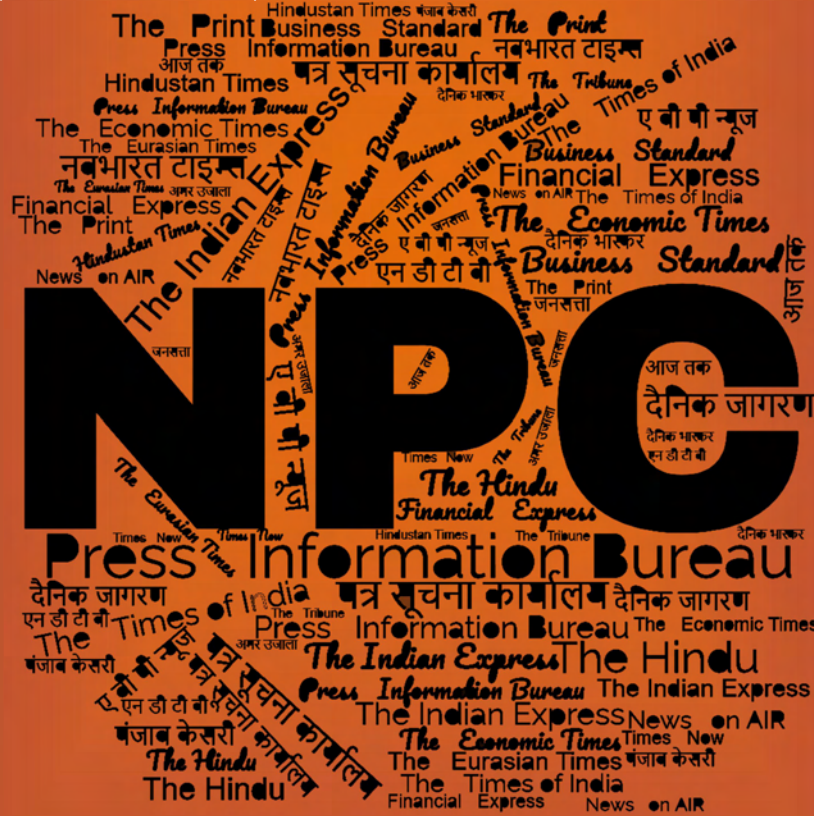
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समाचार पत्रों से चयित अंश Newspapers Clippings

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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Defence News

Defence Strategic : National/International



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Fri, 24 Mar 2023

आत्मनिर्भर भारत: रक्षा मंत्रालय ने बीईएल के साथ 3,000 करोड़ रुपये के दो एकीकृत इलेक्ट्रॉनिक युद्ध प्रणाली 'प्रोजेक्ट हिमशक्ति' की खरीद के लिए अनुबंध पर हस्ताक्षर किए

रक्षा मंत्रालय ने हैदराबाद स्थित भारत इलेक्ट्रॉनिक्स लिमिटेड (बीईएल) के साथ 24 मार्च, 2023 को लगभग 3,000 करोड़ रुपये के दो एकीकृत इलेक्ट्रॉनिक युद्ध प्रणाली 'प्रोजेक्ट हिमशक्ति' की खरीद के लिए एक अनुबंध पर हस्ताक्षर किए। यह परियोजना खरीदें {भारतीय-आईडीएमएम (स्वदेशी रूप से विकसित डिजाइन और निर्मित)} श्रेणी के तहत है, जिसमें समकालीन और उन्नत प्रौद्योगिकियां शामिल हैं।

'प्रोजेक्ट हिमशक्ति' एमएसएमई सहित भारतीय इलेक्ट्रॉनिक्स और संबद्ध उद्योगों, जो बीईएल के उप-विक्रेता हैं, की भागीदारी को प्रोत्साहित करेगी। इसके अलावा यह दो साल की अवधि में लगभग तीन लाख मानव-दिवस रोजगार उत्पन्न करेगी। यह परियोजना सरकार की मेक-इन-इंडिया पहल के अनुरूप देश को 'आत्मनिर्भर' बनाने को लेकर स्वदेशी क्षमताओं को विकसित करने की दिशा में एक बड़ी छलांग है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910400>

THE TIMES OF INDIA

Sat, 25 Mar 2023

Defence Ministry Inks Rs 3,000 Crore Deal for Warfare Systems for Hilly Areas

The defence ministry on Friday inked a Rs 3,000 crore contract for procurement of two integrated electronic warfare systems under Project Himshakti for the Army in mountainous terrain.

The contract signed with defence PSU Bharat Electronics (BEL) is under the “Buy Indian (indigenously designed, developed and manufactured)” category comprising contemporary and niche technologies, an MoD official said.

“Project Himshakti will generate employment of approximately three lakh man-days over a period of two years,” he added.

<https://timesofindia.indiatimes.com/india/defence-ministry-inks-rs-3000-crore-deal-for-warfare-systems-for-hilly-areas/articleshow/98981817.cms>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 24 Mar 2023

Bullet Proof Jackets and Helmets

The Government undertakes procurement of Bullet Proof Jackets and Helmets for Armed Forces and other law enforcement forces from time-to-time from domestic manufacturers. These are procured as per laid down specifications and authorisation after due testing and evaluation.

Bullet Proof Helmets procured by Indian Army and Central Armed Police Forces are compliant to the specifications and National Institute of Justice of USA (NIJ) protection/threat levels approved by the competent authorities. The upgradation, procurement and provisioning of improved version of Bullet Proof Jackets and Helmets is a continuous process for which necessary steps are taken regularly.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Vishnu Datt Sharma in Lok Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910312>



**Press Information Bureau
Government of India**

Ministry of Defence

Fri, 24 Mar 2023

Defence Industrial Corridor

Government of India, in its budget 2018-19, has announced setting up of two Defence Industrial Corridors (DICs) to develop a holistic defence manufacturing ecosystem in the country. One corridor has been established in Uttar Pradesh with six nodes namely, Aligarh, Agra, Jhansi, Kanpur, Chitrakoot & Lucknow and another in Tamil Nadu with five nodes namely, Chennai, Hosur, Coimbatore, Salem & Tiruchirappalli.

As per the information received from Government of Uttar Pradesh, 108 Memorandum of Understanding (MoUs) have been signed with industry/organization having potential investment of Rs 12,191 crore. Investment of Rs 2,445 crore has already taken place in Uttar Pradesh Defence Industrial Corridor (UPDIC). Further, as per information received from Government of Tamil Nadu, arrangements have been made through MoUs etc. with 53 industries for potential investment of Rs 11,794 crore. Investment worth Rs 3,894 crore has already taken place in Tamil Nadu Defence Industrial Corridor (TNDIC). There is no proposal to establish any new Defence Industrial Corridor in the country.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Annasaheb Shankar Jolle in Lok Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910313>



**Press Information Bureau
Government of India**

Ministry of Defence

Fri, 24 Mar 2023

State-of-the-Art Technology Defence Product

Several policy initiatives and reforms have been taken by Government in the past few years to encourage indigenous design, development and manufacture of defence equipment, there by promoting self-reliance in defence manufacturing in the country. These initiatives, inter-alia, include according priority to procurement of capital items from domestic sources under Defence Acquisition Procedure (DAP) 2020; Notification of four 'Positive Indigenisation Lists' of total 411 items of Services and three 'Positive Indigenisation Lists' of total 3,738 items of Defence Public Sector Undertakings (DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them; Simplification of Industrial licensing process with longer validity period; Liberalisation of Foreign Direct Investment (FDI) policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Mission DefSpace;

Launch of Innovations for Defence Excellence (iDEX) scheme involving start-ups & Micro, Small and Medium Enterprises (MSMEs); Implementation of Public Procurement (Preference to Make in India) Order 2017; Launch of an indigenisation portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers; Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu; Opening up of Defence Research & Development (R&D) for industry, start-ups and academia with 25 percent of defence R&D budget; Progressive increase in allocation of Defence Budget of military modernisation for procurement from domestic sources, etc.

Under Technology Development Fund scheme, 68 projects have been sanctioned in the country.

Till date, a total of 68 projects at total cost of Rs 287.4 crore have been sanctioned under TDF Scheme, out of which DRDO's share is Rs 250.12 crore. A total fund of Rs 58.87 crore out of the DRDO share of Rs 250.12 crore have been released.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Girish Bhalchandra Bapat and others in Lok Sabha today.

For further details, follow link:

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910314>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 24 Mar 2023

Manufacturing of Defence Equipment

The Government has given approval to 45 companies/JVs operating in Defence sector with Foreign OEMs. Further, the Government has taken several policy initiatives in past few years and brought reforms to encourage indigenous design, development and manufacture of defence equipment in the country, thereby reducing dependency on imports in coming years. These initiatives, inter-alia, include according priority to procurement of capital items from domestic sources under Defence Acquisition Procedure (DAP)-2020; Notification of Three Positive Indigenisation Lists (PILs) by Department of Defence Production (DDP), MoD with a timeline beyond which they will only be procured from the domestic industry. These three lists consist of total 3,738 items, out of which 2,786 items have been indigenised till February 2023.

Simplification of Industrial licensing process with longer validity period; Liberalisation of FDI policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Innovations for Defence Excellence (iDEX) scheme involving start-ups & MSMEs; Implementation of Public Procurement (Preference to Make in India), Order 2017; Launch of an indigenisation portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of

Technology for Defence manufacturing by assigning higher multipliers; Establishment of two Defence Industrial Corridors one each in Uttar Pradesh and Tamil Nadu.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Malook Nagar in Lok Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910311>



Sat, 25 Mar 2023

India in Talks with South East Asia and Middle East Countries to Sell BrahMos Missiles: BrahMos Aerospace CEO

Atul Dinkar Rane, CEO and MD BrahMos Aerospace Private Limited has said that India is in talks with the countries located in South East Asia and Middle East to sell BrahMos missiles.

It may be recalled that India signed USD 375-million deal for the supply of BrahMos missiles to the Philippines in 2022. The missiles are expected to be delivered to Philippines in 2023.

BrahMos Aerospace, the joint Indian-Russian enterprise, was established in 1998 and was named after the rivers of Brahmaputra and Moscow.

If Southeast Asian and Middle East countries sign a deal with New Delhi for the BrahMos missiles, it would be a major milestone in India's relations with the countries located in the Indo-Pacific region.

If the Brahmos missile deals go through, it would be also a major boost for India which is entangled in a bitter border standoff with China in eastern Ladakh and also send a strong message to Beijing which has border disputes with several countries in Southeast Asia.

It may be noted that Brahmos missile is capable of hitting sea or land based targets beyond radar horizons. Brahmos missile is capable of being launched from submarine. In 2022, the Indian Air Force successfully fired the extended range version of Brahmos Air Launched Missile from a Sukhoi SU-30MKI aircraft.

The BrahMos missile was successfully test-fired from Indian Navy's warship in the Arabian Sea.

The Defence Research and Development Organisation describes Brahmos as a universal long range supersonic cruise missile system that can be launched from land, sea and air. Brahmos has been designed with two variants for Anti-Ship and Land-Attack roles. BRAHMOS Weapon Systems has been inducted and is operational with the Indian Navy as well as the Indian Army.

<https://www.timesnownews.com/india/india-in-talks-with-south-east-asia-and-middle-east-countries-to-sell-brahmos-missiles-brahmos-aerospace-ceo-article-98990599>

Sun, 26 Mar 2023

Rejuvenating the Obsolete/Discarded Fleet of Equipment

By Maj Gen Ashok Kumar, VSM (Retd)

When the war started between Russia and Ukraine on 24 Feb 22, it was appearing as if Russia would be able to capture Ukraine/ impose its national will in a very short span of time but none of these things happened despite the war continuing even beyond a year . Russia has been able to capture some areas in the Eastern Region of Ukraine but the progress has been very tardy. There have been large scale casualties of both – soldiers as well as the equipment on the Russian side.

While the equipment casualties on the Russian side have been far and wide, the tank fleet has suffered substantial losses. The long tank convoys moving towards Kyiv once symbolised the dare devil attack by Russians to capture the Ukrainian capital but later they became a symbol of big loss of face. The tank casualties in this battle have been so high that there has been wide ranging debate the world over as if the era of tank warfare has come to an end. While some think that the nature of changed warfare does not allow a major role to the tanks in today's battle but some others think that the non performance of tanks in this conflict is primarily related to the manner in which they were employed as against any reduced importance of tank warfare.

While proponents of each thought will keep debating the issue, the end state has been huge losses of tanks by the Russians in T-72 category and all its later versions. The replenishment has not been able to match these losses as there is limited production capacity. Russia is attempting to surge its production capacity but that's not easy due to the logistics chain of supplies disrupted by multiple sanctions and other associated reasons.

In such a situation, Russia has turned to its discarded fleet of T- 55 tanks and is trying to make them operational. These can contribute to war effort substantially even if they are inferior to T-72 tanks. While it has become a compulsion for Russia due to heavy losses of its tanks, in the process , it throws important lessons for India to look at its equipment management and employment of the obsolete/ discarded equipment. This is more important since the country has Line of Control (LOC) arrangement with Pakistan and Line of Actual Control (LAC) arrangement with China which is also gravitating towards LOC profile. In such an emerging situation, the potential fire power of the obsolete/discarded as well as captured equipment needs to be gainfully employed. It is not that the obsolete equipment in the discard domain are not being utilised at all as they have been dovetailed in the firepower matrix of the nation to the extent of ammunition available. But they still have much more potential towards war effort which needs to be harnessed. Some of the recommendations are as under:

Obsolete Defence Equipment : Needs to be Re- defined.

The term obsolete is defined wherein a new product has replaced the old one in terms of efficiency and output. In a real sense, the concept of obsolete items in defence and civil domain must vary. In case of a defence equipment, for example, if there is a gun with 15 km range but a newer gun with longer range, better accuracy and more effectiveness has been introduced, the

former may shift to obsolete category in some time but there is still sufficient scope of utilising the earlier gun. The practice of using the obsolete equipment as sector stores in certain cases is a good idea but needs to be institutionalised further in view of LOC with Pakistan and LOC oriented LAC with China. Some of the challenges need to be addressed are as under:

MRO Support to Obsolete Equipment

This may pose a challenge but can be handled as skilled HR and maintenance resources have been available in the past. The issue of spare parts can be sourced from the indigenous industry.

Munitions

This could be another challenge especially beyond the balance munition stocks. This can also be easily surmounted as both the cartridge cases as well as the explosive filling is available with the indigenous industry.

Inclusion in War Fighting Plan

The country's war warfighting plan must include all such land force equipment as only then institutionalised norms for their sustenance and employment will be taken care of.

Captured Equipment

Substantial numbers of Pakistani tanks and other equipment have been captured in different wars. These are primarily being used as war trophies being displayed at public places/ defence institutions or exist as part of museums to showcase our prowess. There is a serious need to re-consider this. While some of such equipment which cannot be revived may continue to be used in the aforesaid manner but those which can be revived, even if these are part of so-called obsolete/ discarded category, must be deployed on the LOC even if possible in the static role. Imagine the Pakistani tank revived by our professional maintainers deployed on LOC and firing on Pakistani positions, a game changer approach. Connected with this will be our ability to use the captured equipment to our advantage even during the battles which may happen in the future. While the thought has been explained with the state of tanks for Russia during ongoing Russia-Ukraine war, it holds good for all types of the equipment in the obsolete/discard category as well those captured from our adversaries. Our concept of Beyond Economical Repair (BER) also needs to be given a re-look for creating the equipment surge more so when indigenous manufacturing capacities can be appropriately developed. This integrated approach by all the defence forces will give a distinct edge to our country.

<https://www.financialexpress.com/defence/rejuvenating-the-obsolete-discarded-fleet-of-equipment/3022438/>

THE TIMES OF INDIA

Sat, 25 Mar 2023

Army Veterans Talk on Defence Roadmap for a Self-reliant India

To commemorate the contributions of the first chief of defence staff, General Bipin Rawat, to strategic thought in the country, a memorial lecture was organised at Surya Auditorium in Lucknow Cantonment here on Friday.

The lecture was delivered by former Chief of Army Staff and minister of state for road transport, highways and civil aviation, Gen VK Singh. The theme for this year's event was 'Compulsions of modernisation and roadmap for an Atmanirbhar Bharat for defence readiness'. The event was organised by 'The Strive', a veterans' thinktank based in Lucknow. A large number of serving officers, veterans and NCC cadets attended the lecture.

GOC-in-C, Central Command, Lt Gen NS Raja Subramani was the guest of honour. Former chief of Air Staff, Air Chief Marshal RKS Bhadauria, was also present. The topic of the day was in harmony with the national objective of 'Make in India'.

Gen VK Singh, Lt Gen NS Rajamani, Air Marshal RK Bhadauria, and Maj Gen Abhi Parmar released a publication titled, 'The Elephant Awakes: Strategic Reflections-2023'.

<https://timesofindia.indiatimes.com/city/lucknow/army-veterans-talk-on-def-roadmap-for-a-self-reliant-india/articleshow/98982525.cms>

The Statesman

Sat, 25 Mar 2023

Drone Federation Team Interacts with IAF in Jammu

To support the Atma Nirbhar Bharat vision, a Ministry of Defence led team from Drone Federation of India on Saturday visited the Air Force Station Jammu.

The team included key stakeholders from the drone industry including various start ups comprising participants.

During the visit, the team interacted with key stakeholders of Air Force Station Jammu and got a better perspective of field requirements for UAVs and Anti Drone measures apart from getting oriented on various capabilities.

The visit created a platform for exchange of ideas to trigger creation of niche technologies in this ever expanding industry.

<https://www.thestatesman.com/india/drone-federation-team-interacts-with-iaf-in-jammu-1503166283.html>

The Statesman

Sat, 25 Mar 2023

Mechanised Forces Ready to Meet Future Challenges: Army Chief

Army Chief Gen Manoj Pande today said that modern and professional Indian mechanised forces were ready to meet future challenges and stand committed to guarding the nation against all threats.

He was speaking at a function at the Suratgarh Military Station in Rajasthan after presenting the prestigious 'President's Standards' or 'Nishan' to four Armoured Regiments of the Indian Army, namely, 49 Armoured Regiment, 51 Armoured Regiment, 53 Armoured Regiment and 54 Armoured Regiment.

The event witnessed an immaculate mounted parade by the four Armoured Regiments along with tanks in all grandeur.

The Armoured Corps is one of the premier combat arms of the Indian Army. Since Independence, the valour, courage and fortitude shown by the Armoured Regiments during the wars have been exceptional.

Gen Pande reviewed the Standard presentation parade and appreciated the rich legacy of valour, sacrifice and traditions displayed by the Armoured Corps in war and in peace. He commended the Regiments which received the prestigious President's Standards, for their exemplary service and conveyed his best wishes to the ranks and families.

<https://www.thestatesman.com/india/mechanised-forces-ready-to-meet-future-challenges-army-chief-1503166198.html>

Business Standard

Fri, 24 Mar 2023

NSAs of India, Iraq Agree to Enhance Cooperation, Counter-terror Efforts

The National Security Advisors of India and Iraq have agreed to enhance defence cooperation and counter-terrorism efforts and strengthen security linkages between the two countries, officials said on Friday.

National Security Adviser of Iraq Qasem Al-Araji is visiting India between March 22 and 25 at the invitation of NSA Ajit Doval.

The visit of the Iraqi NSA is the first cabinet minister-level visit from Iraq to India in the last seven years, the officials pointed out.

Qasem Al-Araji was earlier the minister of interior from 2016 to 2018. He has been the NSA since July 2020.

During the visit, both the NSAs had extensive dialogue on a vast area of mutual interest. Both sides discussed various aspects of ongoing bilateral cooperation.

They agreed to enhance defence cooperation, counter-terrorism efforts and strengthen security linkages. They also exchanged views on the recent developments in their respective regions, the officials said.

During the visit, the Iraqi NSA visited Bharat Electronics Limited and witnessed several examples of 'Make in India' initiative. He also interacted with various Indian defence industry leaders at an interaction organised by the Society of Indian Defence Manufacturers.

The Iraqi delegation also visited Agra.

Iraq has been the largest supplier of oil to India since 2017 accounting for almost 25 per cent of New Delhi's oil imports. Iraq is the fifth largest trade partner of India with imports from Iraq being pegged at USD 32 billion and exports at USD 2.4 billion. The total trade has been estimated at USD 34.40 billion.

Opportunities for Indian oil and gas companies in upstream, mid and downstream sectors are also considered vast.

In November-December 2018, India had organised an artificial limb fitment camp at Al Kafeel hospital in Karbala which was very well received. Prosthetic limbs or Jaipur Foot were provided to more than 600 amputees on charity basis. A second camp is being planned shortly, the officials said.

They said as per estimates, around 33,000 Iraqis travel to India, mostly for medical treatment. It is estimated that it fetches USD 170 million to Indian hospitals.

https://www.business-standard.com/article/current-affairs/nsas-of-india-iraq-agree-to-enhance-cooperation-counter-terror-efforts-123032401247_1.html

The Tribune

Fri, 24 Mar 2023

Ukraine War Delays S-400 Delivery

The delivery of the S-400 air defence missile system to India has been delayed due to the Russia-Ukraine conflict.

In all, five such missile systems have been ordered under a \$5-billion deal signed in October 2018. Of the five missile systems, three have already been delivered. The delivery of the remaining two has been delayed.

The Parliamentary Standing Committee on Defence has said the Indian Air Force (IAF) informed the committee “there is a major project where the deliveries have been stopped because of the war. So, we had a major delivery this year, which is not going to take place. They have given us in writing that they are not able to deliver it”.

Sources said the “major project” mentioned in the committee’s report was the S-400 missile system and the two missiles were expected to be delivered by year-end.

Till now, the delivery of the S-400, in spite of the conflict in Ukraine, was on schedule.

Each S-400 system has eight vehicle-mounted launchers. Each launcher has four tubes allowing the commander on ground to launch four missiles from each launcher.

An S-400 missile can take down a hostile aircraft, a missile or an UAV at a range between 40 km and 400 km. Each system has its own radar and can track more than 100 targets at a distance of 600 km.

<https://www.tribuneindia.com/news/nation/ukraine-war-delays-s-400-delivery-490987>



Sun, 26 Mar 2023

AFINDEX and Beyond: Countering China by Boosting India-Africa Defence Ties

By Ranjit Kumar

Army contingents of nine African nations along with military observers from 11 other states are currently in India exercising together with the Indian Army. Indian naval ship Sujata was at the Mozambique coast from March 21-23 for joint surveillance of the Exclusive Economic Zone, with Mozambique naval officers onboard. The first Africa Chiefs' Conclave to be held in Pune on March 28.

These are some of the recent high-profile flagship engagements of Indian armed forces with their African counterparts. Of late, India has been making serious efforts to re-engage with Africa, a continent of 54 resurgent nations coming out of the colonial rule, for a deeper economic and strategic partnership.

India and Africa share a close and historical relationship. The foundation of India-Africa defence relations are based on the two guiding principles namely 'SAGAR' or Security and Growth for All in the Region' and 'Vasudhaiva Kutumbakam', which means "the world is a family".

In the very beginning of this century, India began its serious engagement with the most backward continent on Earth, which in India is considered a part of its extended neighbourhood. Amid fast changing geopolitics, there is a worldwide rush to woo the old and newly independent nations in Africa, often embroiled in internecine tribal conflict. From Focus Africa programme in the first and second decades, involving heads of states' summit every third year, the Indian leadership has now taken the specific route of directly engaging with the defence ministers, heads of service chiefs and along with common soldiers of African countries.

The Indian military is currently busy with the 10-day Africa-India field training exercise (March 21-30), and for the first conclave of service chiefs that will be held in Pune on March 28. The AFINDEX exercise has attracted contingents from nine countries (Ethiopia, Kenya, Lesotho, Niger, Seychelles, Tanzania, Uganda and Zambia) with observers from 11 other African countries. These kind of engagements with African nations will be better able to project Indian defence policies and capabilities among them.

Undoubtedly, China has taken a lead in establishing its broader footprint in the region, but most countries are now realising the pitfalls of engaging with the Chinese government and enterprises. They are reeling under Chinese debt and their governments are getting a flak from the political class and intelligentsia, whereas India has gained credibility through a policy of capacity building under the Indian Technical and Economic Cooperation (ITEC) programme.

Viewed in terms of bilateral trade, China surpasses India almost three times (US\$ 260 billion) and has become a major player in the African defence equipment market. However, India is also gradually making its mark in the region, with trade multiplying to almost US\$90 billion from a

meagre US\$7.2 billion in 2001. However, considering the rising demand and Indian capability to supply, bilateral trade is not commensurate with the desired level.

India-Africa Relations

India launched the Focus Africa programme in the first decade of the century, which developed a better understanding of India and Indians. In spite of India having a benign image as a nation of Gandhi and Nehru, besides Bollywood films, the country failed to take required advantage of the popularity among African masses. India strongly denounced all the colonial regimes in the continent and actively supported the freedom of those countries at international fora and organisations, but could not encash these overtures towards the continent.

The historical link between India and Africa witnessed a revival during the last three to four years, which has raised strong expectations of making deeper inroads, which will prove to be mutually beneficial and raise the possibilities of making India strongest partner both in trade and defence arenas. Africa is also significant for India because with 54 nations it forms a very significant voting bloc at the United Nations.

India always gets maximum support in the UN for various resolutions, with major bloc of African countries siding with India. The overwhelming participation of African defence officials during the last October DefExpo-22 held in Gandhinagar is a testimony to their desire to have deeper engagement with Indian armed forces, which offer special training courses to militaries from African nations. During the DefExpo, Defence Minister Rajnath Singh addressed the India Africa Defence Dialogue and had exclusive bilateral meetings with the African defence ministers in attendance. The theme of this second dialogue was "Adopting strategies for Synergizing and strengthening Defence and security cooperation".

After the dialogue, an outcome document was released that recommended to enhance cooperation in the field of training in all areas of mutual interest by increasing training slots and deputation of training teams; empowerment and capability building of the defence forces of Africa; and participation in joint exercises and providing humanitarian assistance during natural disasters. An India-Africa security fellowship programme was also launched for experts of African nations.

In consultation with the African defence ministers in Gandhinagar, India proposed to institutionalise the India Africa-Defence Dialogue during successive DefExpos to be held once every two years. Institutionalisation of the India Africa Defence Dialogue will help building on the existing partnerships between African countries and India and to explore new areas of convergence for mutual engagements, including areas like capacity building, training, cyber security, maritime security and counter-terrorism.

The first-ever India-Africa Defence Ministers Conclave (IADMC) was held in Lucknow, during the DefExpo on February 6, 2020. This was the first in the series of pan-Africa events at the ministerial level in the run-up to the India-Africa Forum Summit IV. A joint declaration, 'Lucknow Declaration', was adopted after the conclusion of IADMC 2020 as an outcome document of the conclave.

India-Africa Partnership: Four Areas In Focus

Defence cooperation is only one aspect of India-Africa relations. In fact, India plans to strengthen its partnership with Africa in four areas to fulfil aspirations of both the countries. First area is solar power, this will help bring clean energy, energy security and will create jobs in

Africa. Second is defence trade and military exchanges in the Indian Ocean, manufacturing of armoured vehicles and UAVs. Third is physical and digital infrastructure, helping in IT/consultancy and project exports, and the fourth one is healthcare and pharma.

Bilateral trade is witnessing faster growth, as it has reached the level of almost US\$90 billion. Merchandise trade grew by 34%, from US\$ 67 billion in 2019-20 to US\$89 billion in 20-21. Africa has now become India's fourth largest trading partner.

Thus, from defence to trade to cooperation in international forums, India-Africa engagement has witnessed an upward trajectory. In fact, realising India's popularity and credibility in the region, developed countries like the US and Japan are forming trilateral partnership with India for launching various development projects in the continent. With India's manpower, the financial resources of these countries can be better utilised to counter the Chinese aggressive trade and security policies in the region.

<https://news.abplive.com/india-at-2047/afindex-2023-countereng-china-by-boosting-india-africa-defence-ties-1591017>

THE ECONOMIC TIMES

Fri, 24 Mar 2023

Inside Ukraine's Scramble for "Game-changer" Drone Fleet

At an unassuming industrial estate in northern Ukraine, two former Microsoft executives and a team of engineers are producing military drones that can travel over long distances and carry large payloads.

AeroDrone, which made crop-dusting drones prior to the war and now supplies Ukraine's armed forces, makes unmanned aircraft that can carry up to 300 kilograms or fly up to several thousand kilometres in certain configurations.

As Ukraine seeks to narrow the yawning gap between its own military capabilities and Russia's, Kyiv says it is expanding its drone programme for both reconnaissance and attacking enemy targets over an increasing range. It is hoping that domestic drone makers like AeroDrone will help it meet its ambitious goals.

The government is now working with more than 80 Ukraine-based drone manufacturers, Ukraine's Defence Minister Oleksii Reznikov told Reuters. He said Kyiv needs hundreds of thousands of drones, many of which it is looking to source from a rapidly-expanding domestic industry. Currently, the military operates dozens of models of domestic and foreign drones that fulfil a "wide spectrum" of roles, Reznikov said, in written responses to questions.

"Drones are potentially a game-changer on the battlefield in the same way that precise Western MLRS became last year," Reznikov said, referring to Multiple Launch Rocket System weapons.

Unmanned aerial vehicles (UAV) and other drones are only one element of a war that is currently dominated by artillery, infantry and missiles. Moscow has been able to pound targets across Ukraine with long-range missiles, which Kyiv lacks.

"It is not worth expecting parity in the near future," Reznikov said on closing the armament gap. He added: "Russia is also working on improving its UAVs."

RAMPING UP

Kyiv is hoping to use Western supplies of battle tanks and infantry fighting vehicles in the coming months to launch a counteroffensive to seize back swathes of occupied territory in the south and east.

For cash-strapped Ukraine, whose economy has been decimated by the war and whose government is now reliant on international financing, drones represent a relatively inexpensive way to fight back against Russia's vast military. Ukraine has said it will spend nearly \$550 million on drones in 2023 and has set up drone assault units within its armed forces.

The secretary of Ukraine's National Security and Defence Council, Oleksiy Danilov, told Reuters unmanned vehicles that crash into their target and detonate - so-called kamikaze drones - will be a particular focus for Ukraine in 2023.

Drone warfare specialist James Rogers, a professor at the University of Southern Denmark, said Ukraine's UAV capability still lags behind Russia and its Iranian-made Shahed-136 kamikaze drones, which have been used by Moscow to target Ukrainian energy facilities for months.

Ukraine has received significant supplies of UAVs from its partners, from Turkey's missile-equipped Bayraktar TB2 to the Norwegian-made Black Hornet reconnaissance drone, which weighs less than 33 grams.

Kyiv is now ramping up its own production. Taras Chmut, a Ukrainian defence specialist, says the country's domestic production of aerial drones has grown by three or four times since the start of last year's invasion. His assessment was that the country's production of such drones capacity was "several thousand" a year if funding and parts supplies are steady.

Chmut heads a non-governmental organisation called Come Back Alive that says it has raised tens of millions of dollars of crowdfunding to supply equipment to the military, including aerial drones. He added that the size of Ukraine's overall drone fleet had increased by "tens of times" since February 2022 due to new supplies from both abroad and Ukraine, as well as those donated by organisations such as his.

Reznikov said Ukraine had increased its drone production capacity by "several times" since Russia's invasion in February last year and that it was now able to make drones that work in the air, on land and in the sea. The defence ministry declined to provide drone-production figures.

LONGER RANGE

One area of focus is on developing airborne drones that can travel longer distances, said Reznikov. Kyiv has been seeking longer-range missiles from allies that could hit targets several hundred kilometres away, but has so far been rebuffed.

AeroDrone says one of its models, called Enterprise and based on the frame of a light aircraft, can fly over 3,000 kilometres in certain circumstances.

The company is run by Dmytro Shymkiv and Yuriy Pederiy, who met while working at Microsoft's Kyiv offices, where Shymkiv rose to be country manager and Pederiy was responsible for a major department.

They said their military contracts strictly limit what the company can disclose, but they said the Enterprise and another model called Discovery can be used for a wide variety of tactical purposes thanks to payloads of 300 kilograms and 80 kilograms, respectively. One of the company's aircraft can cost between \$150,000 to \$450,000 depending on the model and configuration, which can include features such as an anti-jamming system to counteract Russian signal interference.

During a late February visit to AeroDrone's workshop, engineers in blue coats bustled around the metal carcass of a light aircraft that forms the skeleton of the Enterprise drone. "It can carry 200 kg for 1200 km," Shymkiv said of the Enterprise.

Pointing to the cockpit that was designed to house a pilot, he said: "Now, it'll be the payload."

The defence ministry said AeroDrone has contracts for the supply of two types of long range drones, but declined to disclose further detail. The ministry declined to specify the maximum range of Ukraine's current drone fleet, but a major state-owned Ukrainian arms company announced in December it had conducted successful tests for an assault drone with a 75 kg warhead and a 1,000 km range.

RUSSIAN TERRITORY

The range and potency of Ukraine's drones is a sensitive issue. Russia has said some Ukrainian drones have been able to get behind the front lines, even though Ukrainian officials typically deny responsibility for suspected drone activity in Russian territory.

In December, Russia said Ukrainian drones attacked two Russian air bases which house long-range bombers deep inside its own territory, killing three Russian air force personnel.

The defence ministry in Kyiv said: "Ukraine has no connection to the events happening on Russian territory."

Over recent weeks, Russian officials have reported at least six incidents involving drones being downed or conducting attacks on the country's territory, some of which they publicly blamed on Ukraine.

When asked by Reuters whether Ukraine uses drones to hit targets in Russia, the defence minister said: "Everything happening on the territory of Russia is a question for Russia alone. Ukraine is not a terrorist state or an attacker."

Speaking about attacks generally, national security council head Danilov said that in theory some strikes on Russian soil could be justifiable in certain circumstances.

"If there is a facility which is causing damage to our country ... We have to destroy these facilities. This is war," Danilov said, speaking to Reuters in February. "And it's not our fault that it (the target) is located on the territory of Russia."

EXPANSION BARRIERS

But challenges for expanding domestic production remain. Chmut, the defence specialist, said one barrier to mass production was the reliance on foreign-supplied parts such as engines and communications systems. He and AeroDrone also said getting parts through customs can be challenging. The process for obtaining certification for military use has also been an issue. Reznikov said the ministry has streamlined the process, reducing it to a few weeks whereas previously it had taken up to two years. AeroDrone's Shymkiv said a separate government ruling

loosening regulations on dual-use item imports, including drones and drone parts, has made life easier for manufacturers. However, he added there remains room for improvement in removing bureaucratic hurdles generally.

The defence ministry said it was working with domestic drone manufacturers to both increase production capacity and standardise output in order to simplify servicing and training.

Danilov, the national security council head, acknowledged Ukraine's reliance on other countries for more high-tech drone components. "We are trying to fulfil our needs in this sector with domestic production, but we realise that it's unlikely we will be able to fulfil everything," he said.

<https://economictimes.indiatimes.com/news/defence/inside-ukraines-scramble-for-game-changer-drone-fleet/articleshow/98967177.cms?from=mdr>



Sat, 25 Mar 2023

North Korea Claims Test of Underwater Nuclear Drone and 'Radioactive Tsunami'

North Korea claimed Friday it had tested an underwater nuclear attack drone able to unleash a "radioactive tsunami", as it blamed recent US-South Korea exercises for a deteriorating regional security situation.

Pyongyang carried out military drills of its own in response this week, the official Korean Central News Agency said, including test-firing a new nuclear-capable underwater drone.

The weapon's mission is to "stealthily infiltrate into operational waters and make a super-scale radioactive tsunami ... to destroy naval striker groups and major operational ports of the enemy," it said.

The new weapon, called Haeil which means tsunami in Korean, "can be deployed at any coast and port or towed by a surface ship for operation," the report said.

North Korean leader Kim Jong Un personally oversaw the tests, KCNA reported, and images released by Pyongyang's Rodong Sinmun newspaper showed a smiling Kim and what appeared to be an underwater explosion.

The agency also said Pyongyang had fired strategic cruise missiles "tipped with a test warhead simulating a nuclear warhead" on Wednesday.

But analysts questioned North Korea's claims.

The idea that Pyongyang has "a nuclear-capable underwater drone should be met with scepticism," said Leif-Eric Easley, a professor at Ewha University in Seoul.

"Pyongyang's claims about a new weapons system are not the same as a credible demonstration of capability," he added.

In a Twitter post, US-based analyst Ankit Panda said it could not be ruled out that the announcement was "an attempt at deception/psyop". Even so, the claim was "shocking," Cheong Seong-chang of the private Sejong Institute told AFP. If true, it is hard to see how Seoul "could

respond to such a formidable new weapon from North Korea that (it says) can completely destroy the South's major operational ports."

The KCNA statement also indicates "Pyongyang is more than ready to use its tactical nuclear weapons at any time," An Chan-il, a defector-turned-researcher, told AFP.

"This obviously further strengthens Kim's justification for his future nuclear tests."

Nuclear power?

Russia has also reportedly developed a similar weapon -- nuclear-capable Poseidon torpedoes -- but mastering the complex technology required for such weaponry might yet be beyond North Korea, experts said.

"For an unmanned submarine to go deep underwater undetected, it requires advanced technology such as control sensors and radar," Choi Gi-il, professor of military studies at Sangji University told AFP. North Korea has not acquired this "to an extent that it can deploy nuclear unmanned sea drones in combat yet," but its claims about the Haeil drone fit a broader pattern, Choi said.

Pyongyang has moved on from simply stockpiling nuclear warheads and is "attempting to further advance and diversify launch mediums," he said, adding that further testing could yet give Pyongyang "formidable" new ways to deliver a nuclear payload.

After a record-breaking year of weapons tests and growing nuclear threats from Pyongyang in 2022, Seoul and Washington have ramped up security cooperation.

On Thursday, the two allies completed their largest joint military drills in five years.

Pyongyang views all such exercises as rehearsals for invasion and on Friday claimed the recent exercises, dubbed Freedom Shield, were a drill for "occupying" North Korea.

Pyongyang's "underwater nuclear attack drone" drill was staged "to alert the enemy to an actual nuclear crisis," KCNA said.

North Korea last year declared itself an "irreversible" nuclear power and Kim recently called for an "exponential" increase in weapons production, including tactical nuclear weapons.

KCNA's Friday statement comes about a week after Pyongyang test-fired its largest and most powerful missile, a Hwasong-17 -- its second ICBM launch this year.

<https://www.hindustantimes.com/world-news/north-korea-tests-new-underwater-nuclear-attack-drone-101679608375794.html>



Sun, 26 Mar 2023

AUKUS Focus is on Submarine Tech., there is no Room for a Fourth Nation: Sources

The primary focus of the AUKUS arrangement between Australia, the U.S. and the U.K. is submarine technology development, and within that there is no room for a fourth country, diplomatic sources said on any potential collaboration between AUKUS and India, while stating

that there is a second pillar for broader technology cooperation where there is room for cooperation with other countries, including India.

“AUKUS has one ambition. It’s one story, not two stories... The one angle of AUKUS is the submarine angle and there is a pillar-2 which is other capabilities. There has been an announcement on submarines and it’s big for everyone. It’s difficult to say that within that construct, there is a room for a fourth country,” a diplomatic source said. “It [submarine development] is about addressing and maintaining the strategic security balance in the Indo-Pacific.”

“There is a pillar-2 for cooperation in technologies like electronic warfare, cyberspace and quantum, and under that, there is a room for more partners,” the source said.

Recently, the three AUKUS partners announced their implementation plan to equip Australia with SSN class nuclear attack submarines. Under this, Australia will receive at least three second-hand SSNs from the U.S. in the 2030s as an interim measure, while Canberra would receive five new SSNs to be designed and developed by the U.K. from the early 2040s to the late 2050s.

In May, Australia will be hosting the Quad leaders’ summit involving India, Australia, Japan and the U.S., where the recent implementation roadmap is expected to come up during discussions.

On the possible conversation between the AUKUS and the Quad, diplomatic sources said the former has no implications for the latter. AUKUS is not a North Atlantic Treaty Organization (NATO) for the Indo-Pacific. Rather, it is focussed on technology and it’s very specific about developing strategically important capabilities to maintain stability, a diplomatic source said. On the other hand, the Quad is a broader collaboration at the political level.

Official sources too stated that cooperation between India and the U.S. on such a sensitive technology as the SSN is unlikely given the U.S. regulatory frameworks and India’s strategic autonomy.

India has its own indigenous programme for the design and development of SSNs, which will give the Indian Navy unlimited endurance underwater. India is currently looking at procuring six advanced conventional submarines to arrest its depleting submarine strength, and also speeding up its SSN programme.

Engine development

Separately, both U.S. and the U.K. are in the race to co-develop a fighter jet engine with India and France. With the General Electric GE-414 engine has already been selected to power the Light Combat Aircraft (LCA)-MK2, the American government is currently considering an application from General Electric to license manufacture the engine in India.

Making a strong pitch for the Rolls Royce proposal at Aero India in February, the U.K.’s Minister for Defence Procurement Alex Chalk said the jet engine cooperation proposal put forward was the best “out there” and “most cost-effective” that “would set India apart”. “What the U.K. is committed to is the our biggest ever capability transfer in our history. We would be providing more capability than to any other ally — a G-7 country, G-20 country or Five Eyes country,” he had stated.

<https://www.thehindu.com/news/international/no-room-for-fourth-country-under-aukus-for-submarine-technology/article66664887.ece>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 24 Mar 2023

Novel Bi-metallic Joining Process can Create a Composite from Copper and Steel for Engineering Applications which Need High Thermal & Electrical Conductivity

Researchers have developed a novel bi-metallic joining process to create a bimetallic composite made from copper and steel, which has high thermal and electrical conductivity for engineering applications, such as heat exchangers, hydraulic pump components, cooling staves, guide plates, and hot-work tooling applications.

In the world of technological advancements, high-performing and multifunctional structures and components are in great demand. To cater to this demand, the development of bimetallic structures has gained significant attention. These structures offer a unique combination of individual material properties, making them highly customizable for a range of applications. Research in this area has significant implications for various engineering applications where the thermal conductivity and strength of the components play a critical role.

One such bimetallic composite, made from copper and steel, has high thermal and electrical conductivity, exceptional corrosion resistance, and mechanical properties.

However, welding copper and steel together can be challenging due to the differences in their melting points, thermal conductivity, and thermal expansion properties. This has made it difficult to join copper and stainless-steel bimetallic structures without defects.

To address this challenge, researchers at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), an autonomous R&D Centre of the Department of Science and Technology (DST), Govt. of India, have developed a novel bi-metallic joining process using a technique called laser powder bed fusion (L-PBF) or selective laser melting (SLM) technique of metal 3D printing. This technique involves layer deposition by metal powder melting, which creates a small melt pool of stainless-steel powder with subsequent high cooling rates, limiting the intermixing of the stainless-steel melt on copper surface.

The laser beam interaction with metal during the L-PBF process creates an impact on the degree of intermixing of both copper and steel. The researchers have successfully demonstrated the formation of the interfacial microstructure and bonding mechanism and investigated the reason for achieving a strong interfacial bond.

Tensile behavior studies were conducted, which convinced the researchers of the strong copper-steel bimetallic bond at the interface. The micrographs obtained through high magnification

imaging facility showed the limited intermixing of the copper and steel-rich regions across the interface. The diffusion of Fe, Cr, and Ni elements from the steel to the copper side led to solid solution strengthening of copper near the interface, with a gradient drop in hardness from the interface on the copper alloy side.

The bi-metallic joining process between stainless steel and copper alloy, using laser powder bed fusion (L-PBF) technique, has the potential to revolutionize the engineering industry by offering customizable and strong bimetallic structures with enhanced properties.

Publication: DOI: <https://doi.org/10.1016/j.jmapro.2022.06.055>

<https://pib.gov.in/PressReleasePage.aspx?PRID=1910310>



Mon, 27 Mar 2023

ISRO's LVM-3 Successfully Launches 36 Satellites, Completing OneWeb Constellation

Indian Space Research Organisation's (ISRO) LVM-3, in its second commercial launch on Sunday, placed 36 OneWeb satellites in orbit, completing the first-generation constellation enabling the UK-based company to initiate global coverage this year. Sunday's was the sixth launch for India's heaviest rocket LVM-3 – which includes the launch of Chandrayaan-2 in 2019 – and the second one where it demonstrated the capability of launching multiple satellites in low earth orbit.

The 36 satellites were placed in orbits in nine batches of four satellites each. The satellites in total weighed 5,805 kg.

After the burn of all three stages of the rocket, taking the satellites to around 450-km circular orbit, the first batch of satellites was injected into orbit just over 19 minutes after lift-off. The fourth batch was placed in orbit at around 33 minutes after lift-off.

The other five batches were injected into orbit when Indian ground stations did not have their eyes on the craft. The launch of all the satellites was later confirmed when on-board data was received by the ground-stations after a 43-minute black-out period.

The satellites were also placed at a lower 450-km circular orbit in the current mission, as against the 600-km orbit during previous missions. Consequently, the satellites were at a higher velocity at launch. This is a challenge for the mission as the separation has to be sequenced in such a way that the satellites do not crash into each other.

Sunday's was the second launch that ISRO did for the United Kingdom-based company, which is backed by the government of UK and India's Bharti. The company, in its first-generation constellation, plans to use 588 active satellites – placed in 12 rings of 49 satellites each with every satellite completing a full trip around the earth in 109 minutes – to provide high speed, low-latency global connectivity. This was the eighteenth launch of OneWeb satellites, and the third this year, bringing the total number of satellites in the constellation to 618.

“OneWeb already has connectivity solutions active today in key geographies across the globe and is bringing new areas online. OneWeb’s high-speed, low-latency solutions will help connect communities, enterprises, and governments around the world, demonstrating the unparalleled potential of LEO (low earth orbit) connectivity,” the company said in its release. It added, “Across India, OneWeb will bring secured solutions not only to enterprises but also to towns, villages, municipalities and schools, including the hardest-to-reach areas across the country.”

After the launch of the 16 satellites visible from Indian ground stations, ISRO chairperson S Somanath said in his address, “I am very happy today for the consecutive successes of the LVM-3 and want to thank NSIL (ISRO’s commercial arm) for bringing this opportunity to us and also for the confidence OneWeb India has on ISRO for this launch.” He also thanked the ISRO team for making the rocket a reliable one; none of the six missions using the rocket have failed. “Once again, the mission demonstrated the rocket’s capability of placing large, heavy satellites into the right orbit without any glitch. We look forward to engagement with commercial partners for making this rocket one of the best in this class.”

The heavy launch vehicle entered the commercial market in October last year when it launched the first batch of 36 OneWeb satellites. After opening the space sector to private players in 2020, India has been focusing on increasing its share in the global commercial space market. Despite being one of the major space-faring countries, India accounts for only 2% of the commercial market at present.

<https://indianexpress.com/article/technology/science/isro-lvm-3-m3-one-web-india-2-mission-rocket-successfully-places-36-satellites-in-lower-orbit-8519291/>

THE TIMES OF INDIA

Sun, 26 Mar 2023

ISRO Lists 100 Technologies for Local Industries

Indian Space Research Organisation (Isro), in line with the Centre's push for indigenisation and self-reliance, has listed 100 technologies/products it wishes to realise through Indian industries and has asked the latter to respond by April 17.

From design, realisation and flight testing of a sub-scale hybrid drone prototype to various software, composite materials, valves, small satellite buses and more, are listed in the latest expression of interest (EOI) floated by the agency.

The list encompasses technologies required for launch vehicles, satellites, application sectors, human space flight and space exploration etc. And once finalised and procured, the products will be utilised across space activities - designing, developing, and realising the launch vehicles and spacecraft, launching and services etc - being carried out by Isro centres across the country.

"Various Isro centres spread across India are carrying out R&D activities with in-house expertise and facilities. Support from industries is also being harnessed through mechanisms like purchase order, including technology developmental orders for various space systems, contract, MoUs, technology transfer etc. Many products are successfully developed and realised through industries for the Indian space programme," the EOI reads.

It adds that Isro is currently in need of developing certain potential technologies/products/systems for its programmes in a time-bound manner and that the EoI is being floated in this context.

<https://timesofindia.indiatimes.com/city/bengaluru/isro-lists-100-technologies-for-local-industries/articleshow/99003507.cms?from=mdr>

Telangana Today

Fri, 24 Mar 2023

Hyderabad: 5th ISSE National Conference Organized

The Indian Society of Systems for Science and Engineering Hyderabad local chapter in association with Osmania University College of Engineering (OUCE), ISRO and DRDO has organized the 5th ISSE national conference on Systems Approach for Self-Reliance in Advanced Technologies on Friday.

Speaking at the inaugural event, Scientific Advisor to Raksha Mantri, Dr.G Satheesh Reddy emphasized the importance of systems engineering in solving complex problems using indigenous technologies towards self-reliant India under Atma Nirbhar Bharat.

ISRO Chairman & Department of Space Secretary S Somanath spoke about the prominence of the system engineering from a small product like a twin shaving blade to a complex product like a rocket system. DRDO Chairman Dr. Samir V Kamat highlighted the importance of systems engineering in terms of the role of subsystems in designing complex systems.

OU Registrar Prof. P Laxminarayana urged the DRDO and ISRO to establish chair professors in the engineering college. OUCE Principal Prof. Sriram Venkatesh requested the DRDO and ISRO to set up centres of excellence in OUCE. The two-day event will conclude on Saturday.

<https://telanganatoday.com/hyderabad-5th-isse-national-conference-organized>

THE HINDU

Fri, 24 Mar 2023

ICMR Releases Ethical Guidelines for AI Usage in Healthcare

The Indian Council of Medical Research (ICMR) has released the country's first Ethical Guidelines for Application of Artificial Intelligence in Biomedical Research and Healthcare, aimed at creating "an ethics framework which can assist in the development, deployment, and adoption of AI-based solutions" in the fields specified.

Through this, they hope to make "AI-assisted platforms available for the benefit of largest section of common people with safety and highest precision possible," while also addressing emerging ethical challenges when it comes to AI in biomedical research and healthcare delivery.

The document, prepared by the Department of Health Research and ICMR Artificial Intelligence Cell, Delhi, will be updated as and when the need arises, said a senior Health Ministry official. Developed through extensive discussions with experts and ethicists, the guidelines include sections on ethical principles, guiding principles for stakeholders, an ethics review process, governance of AI use, and informed consent.

“It [the document] is intended for all stakeholders involved in research on AI in biomedical research and healthcare, including creators, developers, researchers, clinicians, ethics committees, institutions, sponsors, and funding organizations,” noted Dr. Rajiv Bahl, director-general, ICMR.

Development, as well as deployment of AI-based solutions in healthcare, span a number of issues, including those related to data safety, data sharing, and data privacy, say experts. The document says that as AI technologies are further developed and applied in clinical decision making, it is important to have processes that discuss accountability in case of errors. As per the guidelines, the ethical review process for AI in health comes under the domain of the ethics committee. The document notes that the regulation of AI technologies in healthcare is still in its nascent stage even in developed countries.

India already offers streamlining of AI technologies in various sectors including healthcare through the National Health Policy (2017), National Digital Health Blueprint (NDHB 2019), and Digital Information Security in Healthcare Act (2018) proposed by the Health Ministry which will pave the way for the establishment of the National Data Health Authority and other health information exchanges.

<https://www.thehindu.com/sci-tech/health/icmr-releases-the-countrys-first-ethical-guidelines-for-application-of-ai-in-biomedical-research-and-healthcare/article66657158.ece>

THE ECONOMIC TIMES

Sun, 26 Mar 2023

Hardware Maker Tenstorrent to Partner with Indian Startups for Building Open Source RISC-V Based Microprocessors

Tenstorrent, a next-generation computing company that builds computers for AI, is looking to partner with Indian startups for building open source RISC-V based microprocessors, a top official of the company said. Tenstorrent CEO Jim Keller told PTI that he is looking forward to real India projects to come out of the country's startups like building an entire data centre using RISC V services designed by local companies.

"Tenstorrent as a company is going to invest in some (startups). We are not an investment company but we have a very keen interest. Let's say there has been progress with some because we're going to collaborate where we plan to share some technology," he said.

Keller is known for his work in designing the AMD K7 processor, which was the first computer chipset to achieve 1 gigahertz processing speed, AMD K8 processors, Apple A4 and A5 chipsets and later his role for the leading design team at AMD.

The Apple A4 chip was used in the first iPad.

Keller said that he has worked with Indian engineers over the years and has realised that sometimes they are "unwarrantedly optimistic".

When asked about his views on India's semiconductor mission during the time when there is excess supply of the chipsets in the market, Keller said that the chip industry is cyclical in nature and it takes a couple of decades to build the industry.

"If India wants to have local production they have to invest today, it is as good as any day.

"There's a lot of space to participate in cyclical businesses. When they go down, everybody pulls back their investment till there's a shortage and then everybody puts the investment in when the dollar is surplus. You just have to have a very long-term finance plan," Keller said.

He said the upturn in semiconductors has always been larger than the amplitude in the previous cycle. "If you make good decisions, and you want localisation and you want local companies to build stuff, you can have a really good outcome. I have had good success and I have enjoyed working with India teams for years. I am an optimist. The things that are going to happen in the next 10 years are incredible. It's a really big opportunity," Keller said.

He said that people in India are really thinking hard about the opportunities in the semiconductor space.

The government has approved the Semicon India programme with a total outlay of Rs 76,000 crore for the development of semiconductor and display manufacturing ecosystem in the country but modified it later to provide fiscal support of 50 per cent of the project cost on pari-passu basis for setting up semiconductor and display fabrication plant in India.

The Ministry of Electronics and IT has started the Digital India RISC-V (DIR-V) program with the aim to launch the first indigenous chipset by 2023-24 and boost the local development of electronic chips.

"I was quite interested when the Indian government announced that they wanted to support RISC-V at the national level. It's really interesting because that creates a platform for innovation and a whole bunch of different levels," Keller said.

He said Tenstorrent design centers in Bangalore are going to partner with some Indian startups to build "cool computers" that are basically designed and built in India.

<https://economictimes.indiatimes.com/tech/technology/hardware-maker-tenstorrent-to-partner-with-indian-startups-for-building-open-source-risc-v-based-microprocessors/articleshow/99010461.cms>

