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Sun, 01 Apr 2022

आकाश मिसाइल का पोकरण फायरिंग रेंज में परीक्षणों की श्रृंखला हुई पूरी



जैसलमेर 01 अप्रैल (वार्ता) मेक इन इंडिया के तहत जैसलमेर की पोकरण फील्ड फायरिंग में भारतीय सेना एवं डी,आर,डी,ओ के आकाश प्राइम मिसाइल के एडवांस वर्जन के चल रहे ट्रायल आज संपूर्ण हो गए। आकाश मिसाइल का शनिवार को सफल परीक्षण किया गया जो मानकों पर पूरी तरह से सफल रहा। सरफेज से हवा में दागी गई इस नए वेरिन्ट की आकाश मिसाइल ने दुश्मन के छद्म टारगेट को सफलतापूर्वक ध्वस्त कर दिया। सप्त शक्ति कमांड के तहत हुए इस परीक्षण के दौरान साऊथ वेस्टर्न कमान के जी,ओ,सी लेफ्टिनेंट

जनरल ए.एस.भिंडर सहित सेना एवं डी,आर,डी,ओ के उच्चधिकारी मौजूद थे। पिछले तीन दिनों से आकाश मिसाइल के जारी परीक्षण डी,आर,डी,ओ और सेना के अधिकारियों की देखरेख में चल रहे हैं। इस सफल परीक्षण से सेना की भविष्य की चुनौतियों से निपटा जा सकेगा और सेना की मारक क्षमता और मजबूत होगी।

बताया जा रहा है कि जमीन से हवा में मार करने वाली आकाश प्राइम मिसाइल में नए एडवांस फीचर जोड़े गए हैं। साथ ही भीषण गर्मी में इसकी मारक क्षमता को भी परखा जा रहा है। बुधवार को इसे एक प्लेटफॉर्म पर तैनात एक हवी प्लेटफॉर्म व्हीकल से फायर किया गया और यह अपने सारे पैरामीटर्स की कसौटियों पर खरी उतरी। खासकर मिसाइल का कमाण्ड कंट्रोल सिस्टम, एवियोनिक्स आदि पर मिसाइल सिस्टम ने सही तरीके से कार्य किया। सूत्रों के अनुसार आकाश मिसाइलें भारत में बनीं हवा में मार करने वाली मिसाइलें हैं। इन्हें जमीन पर किसी भी वाहन या स्थायी जगह से दागा जा सकता है। आकाश मिसाइल परिवार में अब तक कुल दो मिसाइलें थीं अब आकाश प्राइम इस वर्ग की तीसरी अहम मिसाइल बन गई है। ये मिसाइलें हवा में किसी भी तरह के एयरक्राफ्ट को नष्ट करने में सक्षम हैं। आकाश मिसाइलों को विकसित करने का काम डी,आर,डी,ओ ने किया है और इनका उत्पादन भारत डायनेमिक्स लिमिटेड की ओर से किया जाता है।

सूत्रों ने बताया कि न्यूक्लीयर क्षमता वाली यह मिसाइल 2.5 मैक यानि करीब 860 मीटर प्रति सेकण्ड की रफ्तार से 19 कि.मी. तक की उंचाई तक उड़ सकती है। खासकर आसमान में सेन्सर के जरिये फाईटर जेट, ड्रोन, कूज मिसाइलों व एयर की सरफेज मिसाइलों समेत बेलैस्टिक मिसाइलों को भी यह मिसाइल अपना निशाना बना सकती है।

इस मिसाइल की रेंज आसमान में तीस कि.मी. तक है और यह एक बार में 60 किलोग्राम तक पेलोड ले जा सकती है। यह मिसाइल हवा में भी नियंत्रित की जा सकती है।

<http://www.univarta.com/akash-missile-test-series-completed-at-pokhran-firing-range/rajasthan/news/2721225.html>

Army successfully test-fires advanced version of Akash Prime at Pokhran

The Indian Army's Air Defence Warriors of Sapta Shakti Command successfully tested one more advanced version of Akash Prime, a new generation missile at field in on Sunday. The missile included simultaneous engagement of multiple aerial targets ensuring 100% hits, demonstrating the potency of the weapon in realistic operational conditions. The new variant of the missile fired from surface to air successfully hit the pseudo targets of the enemy. During the trials which were on for the last four days, GoC Lieutenant General A S Bhinder, scientists from Defence Research and Development Organisation (DRDO) and senior army officers were present. DRDO developed the 'Made in India' Akash missile system that can be launched from mobile platforms and engage multiple targets simultaneously from different directions.

An army official said, "The upgraded missile has been fired from a mobility platform. The new generation missile is designed for use by the Indian Air Force (IAF) and Indian Army in order to intercept high manoeuvring aerial threats. The Indian Army artillery will become stronger from the missile and the aerial security will become tighter." The missile is capable of engaging multiple targets in real time and has an intercept range of 40km with the missile guidance system being more accurate now along with the fire control system. A defence source said, "The performance of the command and control system, on-board avionics and aerodynamic configuration of the missile was successfully validated during the trial. Several range instruments including radar, EOTS and telemetry systems were used while monitoring the entire path of the missile during the test launch."

<https://timesofindia.indiatimes.com/city/jaipur/army-successfully-test-fires-advanced-version-of-akash-prime-at-pokhran/articleshow/91244056.cms>

Defence News

Defence Strategic: National/International

India beefs up cyber preparedness with national boot camp

Hands-on exercises to deal with cyberattack situations marked the maiden National Cyber Exercise (NCX) that concluded in New Delhi on Friday. The event, under the aegis of

the National Security Council Secretariat (NSCS), was held in wake of a recent cyberattack on Oil India and similar incidents related to India's critical-information infrastructure. In the concluding session, deputy national security adviser Rajinder Khanna said that India being in a "difficult neighbourhood", the use of "cyber as a weapon becomes extremely important".

The event was executed in two stages — training and conduct. CyberExer Technologies, a NATO-awarded Estonian company accredited for conducting cyber exercises, held a training session for the officials. Thereafter, teams worked on cyberattack scenarios. According to California-based Cyber Security firm Trellix, India's critical infrastructure witnessed a 70% jump in ransomware attacks in 2021. "In the last couple of months, ransomware attacks on supply chains in critical infrastructure have been growing in number, scale, and complexity," Lt Gen (retd.) Rajesh Pant told The Economic Times on the sidelines of the meeting.

The nation should be prepared for situations like the recent event at Oil India, which is why "we got people from all critical sectors of India in one room," he added. Pant highlighted that the Russia-Ukraine conflict has shown that modern warfare can be a "quasi-kinetic". Asked if India would be looking at aggressive cyberdefence posturing in the days to come, he said, "You cannot have good cyberdefence without having capability for deterrence. In what manner that is executed is classified." Pant drew attention to a recent circular issued by CERT-IN, India's computer emergency response team, which mandates all organisations to report cybersecurity breaches to CERT-IN within six hours.

"India needs to build, strengthen, and continuously train to predict, pre-empt, prevent, detect, respond, mitigate and remediate any cyberthreat," he said. "Due to the high levels of interdependencies involving multiple stakeholders and cross-domain linkages, it is necessary to have a national-level cyber exercise to suitably assess, validate, and hone the capabilities of the stakeholders towards securing the national cyberspace."

NSCS is keen to make NCX an annual event, adding CISOs from private organisations as well. Data Security Council of India was the knowledge partner of this year's event, which was supported by the Defence Research and Development Organisation (DRDO). Inaugurating the event on April 18, national security advisor Ajit Doval had highlighted the importance of safeguards, as threats to cybersecurity can impact social, economic, and national security.

<https://economictimes.indiatimes.com/news/india/india-beefs-up-cyber-preparedness-with-national-boot-camp/articleshow/91219470.cms>



Sat, 30 Apr 2022

On the 6th and 7th of May, Northern Command will host a Technology Symposium.

On May 6 and 7, the Northern Command in Udhampur will organise a two-day North Tech Symposium, during which important personalities and defence specialists will present key notes on various issues, followed by an exhibition. On May 6, while GOC-in-C Northern Command Lt Gen Upendra Dwivedi will make the opening address, Lt Gen SS Hasabnis will offer the keynote

on Emerging Technologies for Enhancing Operational Efficiency at Northern Borders, according to a defence spokeswoman.

The experts will also discuss Policy and Procedures for Expeditious Procurement, *Raksha Atmanirbharta* – Initiatives by the Indian Army, DRDO, Industry, and Academia, and *Raksha Atmanirbharta* – Initiatives by the Indian Army, DRDO, Industry, and Academia. Apart from *Raksha Atmanirbharta* – A Defence Private Industry Perspective, Transformation of Ordnance Factories into Productive and Cost-Effective DPSUs – Challenges and the Way Forward They'll also talk about global trends in surveillance systems and Indian industry capability, as well as the latest drone and counter-drone technologies, Drone Systems and Technologies for Northern Command Operational Requirements, Swarm Drone Technologies for HAA, and Counter Drone Systems and Technologies.

<https://defenceaviationpost.com/on-the-6th-and-7th-of-may-northern-command-will-host-a-technology-symposium/>



Mon, 2 May 2022

India's Defence industry: From importer to exporter

According to a research published by the Stockholm International Peace Research Institute (SIPRI), India was the world's second-largest weaponry importer from 2014 to 2018, accounting for 9.5 percent of worldwide totals. In 2014-18, Russia contributed 58 percent of Indian arms imports, and countries including Israel, the United States, and France all increased their arms imports to India. In reality, Russia's proportion of Indian imports is set to grow in the future years, as India has signed several agreements with Russia and many more are in the works. The S-400 air defence system, four stealth frigates, AK-203 assault weapons, a second nuclear attack submarine on lease, and certain Kamov-226T utility helicopters, Mi-17 helicopters, and a short-range air defence system are among the Russian imports. This clearly demonstrates that India has been significantly reliant on weaponry imports to strengthen its defence sector for many years.

However, according to a new report from the Stockholm International Peace Research Institute (SIPRI), India's arms imports fell by 33% between 2011-15 and 2016-20, and as a result, India has lost its top spot to countries with the highest arm imports to Saudi Arabia, which fell by 24% between 2009-13 and 2014-18. These figures show that India is reducing its arms imports and, as a result, developing its defence sector by manufacturing its own military equipment, while also aiming to increase revenue by exporting arms and military equipment to other countries. As a result, the crucial question that now enters the discussion is: Can India transition from being a net importer to a net exporter of military goods?

<https://defenceaviationpost.com/indias-defence-industry-from-importer-to-exporter/>

Online Defence procurement sees 250% jump, touches record high of Rs 15,000 crore

Procurement orders through the Government e-Market (GeM) portal by the Ministry of Defence (MoD) reached an all-time high of Rs 15,047.98 crore for the financial Year 2021-22. It is a jump of more than 250 per cent over the last financial year. The GeM was started in August 2016 to revamp the old tender process and bring greater probity and transparency in government procurement through digitisation.

The Ministry of Defence in its statement said, “In a short span since its inception, the MoD has embraced the digital drive and embarked on this path with absolute resoluteness. Despite multiple challenges on the ground, the results have been astounding.” The statement further added, “The MoD is committed to contribute significantly to the Government's vision of promoting digitisation and transparency in consonance with Digital India.”

<https://www.indiatoday.in/defence/story/jump-defence-ministry-procurement-gem-record-high-digitisation-1943916-2022-04-30>



U.S. Defence official visits Hyderabad

U.S. Deputy Assistant Secretary of Defence for South and Southeast Asia, Lindsey W. Ford, visited the Tata-Lockheed Martin Aerospace facility in Hyderabad on Friday. She also attended a round table at startup incubator T-Hub, in which tech entrepreneurs from sectors as diverse as aerospace, healthcare, automotive, and software participated, the US Consulate said in a statement. “This visit highlights the strength of Hyderabad’s emerging tech sector and the Telangana government’s instrumental role in supporting startups, as well as the defence ties that are contributing [to] the U.S.-India partnership,” said U.S. Consul General Joel Reifman.

Tata Advanced Systems’ partnerships with U.S. firms such as Lockheed, Boeing and GE - along with the presence of other U.S. firms like Honeywell Aerospace and Pratt & Whitney - have created a thriving environment for the aerospace and defence industry in Telangana. The Consulate said Ms. Ford serves as the principal advisor to senior leadership within the U.S. Department of Defence for all policy matters pertaining to development and implementation of defence strategies and plans for South and Southeast Asia. Prior to her arrival in Hyderabad, she attended the Raisina Dialogue in New Delhi.

<https://www.thehindu.com/news/cities/Hyderabad/us-defence-official-visits-hyderabad/article65370804.ece>

War has cast a shadow on India's Defence sector

For India, its 70-year-old friendship with Russia and its co-operations in the sectors of defence and space are now in jeopardy because of the ongoing war between Russia and Ukraine. For India, its 70-year-old friendship with Russia and its co-operations in the sectors of defence and space are now in jeopardy because of the ongoing war between Russia and Ukraine. The defence purchases of India are mainly with Russia, a trusted friend in all the wars against Pakistan. But in recent years, India has begun to reach out to Ukraine for the supply of certain hardware items required for defence purposes. After all, Ukraine is the Tech Hub of Europe. Until the war broke out, all the top IT majors had offices in Ukraine.

From missiles to aircraft, and more recently, assault rifles like the AK 57 and AK 203 rifles, which Indian private players chipped in to manufacture under the Make In India initiative. Many such projects are now in limbo, and the status quo might continue even if the war ends. Even if the war concludes as designed by Vladimir Putin, there is no guarantee that all manufacturing and IT sectors will normalise in both countries. While Ukraine is almost reduced to rubble, Russia is also facing severe financial constraints. To make it more elaborate, the Indian Air Force (IAF) hopes to upgrade the Su-30MKI to ensure its better performance and longer life. Termed as the "Super Sukhois" and scheduled to be upgraded and manufactured by HAL, this project was planned so that it would plug into the depleting squadrons of the IAF.

This war, in which India chose to bat for peace and negotiate, will leave the country in a hot soup. According to the IAF, the spare parts delivery schedule could be affected due to the ongoing war and the Western sanctions on Russia. The IAF said it is assessing the situation and is hopeful. "A huge amount was spent last year. Many Sukhoi-30s and other fighter jets are grounded. When those spares start coming in from this year onwards, we will be able to actually add some squadrons," an IAF source said. The Su-30MKI 'Flanker' is the backbone of the IAF, which operates nearly 270 jets of this type.

India has a strong link with Antonov. In 1984, India became the launch customer for its AN-32 military transport aircraft. Designed to withstand adverse weather conditions, the AN-32s were used to ferry cargo and personnel everywhere, including the Himalayan frontier. Even now, India operates over 100 AN-32s. India is dependent on both Russia and Ukraine for the supply of critical defence equipment. The war, according to the experts, will have an adverse impact on India in many ways. Besides new purchases, the Indian military's existing platforms, from fighter planes to air defence missiles, artillery guns, and infantry combat vehicles (T-72 and T-90 tanks), are dependent on both the warring nations for critical spare parts.

With hostile neighbours knocking on both eastern and western fronts, major projects will take a back seat. The much awaited AK-303 rifle production in India and the BrahMos cruise missile, which is awaiting its first ever export order from the Philippines, are among those which will take a hit. But the immediate impact will be on the much-required S-400 air defence system, whose delivery began in December 2021. The Indian Navy, which is waiting for its nuclear submarine INS Chakra III, will also be delayed. It was expected to be commissioned by December 2025. More than 70 per cent of the Indian military's arsenal is of Russian origin. INS Vikramaditya, the Indian Navy's sole operational aircraft carrier, is a refurbished Soviet-era ship.

Moreover, four of the Indian Navy's 10 guided-missile destroyers are Russian Kashin-class, six of its 17 frigates are Russian Talwar-class, and its lone nuclear-powered attack submarine, INS Chakra, is an Akula-class vessel on lease from Russia. Similarly, most of the Indian Air Force's fighter jets are Russian—it operates 272 Su-30MKIs and over 100 MiG-21 Bisons. The IAF also operates Russian-made Mi-17 and Mi-8 helicopters.

The end of the cold war era also soon led to the collapse of the Soviet Union. The Indian defence sector had an uphill task of tracing the people who contributed to the development of Russian war machines. After repeated requests and follow-ups, the Russian government has begun helping Indian manufacturers with the required critical spares. After Ukraine became a separate nation, India enjoyed good trade ties with it. In 2008, it signed a \$400 million contract with Ukraine to upgrade its 105 AN-32 planes. Accordingly, 45 aircraft were upgraded in Ukraine, and the rest will be bettered at Kanpur. But the project was delayed after Russia refused to supply Ukraine with critical equipment for the retrofit. Following a breakdown of ties between Kyiv and Moscow over the Russian annexation of Crimea in 2014, the IAF bought Lockheed Martin C-130J Super Hercules and Boeing C-17 Globemaster III transport jets from the United States.

Three years ago, India signed a \$950 million contract with Russia for four advanced Talwar-class frigates. But these warships are designed to operate with a Ukrainian power plant, and no alternative option is available. In 2019, India persuaded Ukraine to supply engines for two ships to the Kaliningrad shipyard in Russia. But the engines for the other two ships are yet to be delivered. Experts maintain that India will have to look at countries like Georgia, Uzbekistan, and Kazakhstan for critical spare parts, as these countries also have old Soviet-era military platforms. Military pundits believe that the conflict will be a big blow to India's military modernization, as the war is likely to continue further. The experts agree that they should not take the side of either country as the Indo-Russian partnership is more valuable in the interest of the nation.

<https://www.financialexpress.com/defence/war-has-cast-a-shadow-on-indias-defence-sector/2509260/>



Sun, 1 May 2022

Pakistan's 'Harba' Missile – How is Indian Navy Preparing to Defend itself from Moskva-Like Incidents?

Alarm bells rang out through India's defense establishment on April 14, 2022, as the Russian warship Moskva was sunk by Ukrainian Neptune missiles. In the name of national security, India needed to immediately probe and uncover how one of the world's mightiest naval forces could lose such a prestigious warship? More so, at the hands of a so-called "underdog" like Ukraine. Furthermore, could India face a similar strategic threat from its own "underdog" neighbor Pakistan? This was a debacle for Russia, one that India needs to urgently focus on to dissect and learn from. Large portions of India's arms and weaponry bear the "made-in-Russia" seal. Russia has been India's largest supplier of arms and experts in New Delhi would be keenly watching the performance of Russian military hardware in the Ukrainian conflict.

Pakistan's Harba Anti-Ship Missile

A valid question then arises — could India's military assets be susceptible to similar vulnerabilities that we see in the Russia-Ukraine conflict today? Can India's vulnerabilities be exploited by Pakistan, whose armory contains a fresh stock of 'Harba' anti-ship missiles? This demands urgent strategic answers. India has begun scrutinizing the reasons behind the Moskva sinking, which will be tabled during the Naval Commanders Conference. How was the Moskva brought down? The sinking of their great warship dented Russian morale, and tarnished their prestige despite the capture of Mariupol city in Ukraine, on April 22, 2022.

The first pieces of the puzzle were uncovered shortly. A report by Economic Times claimed that the Moskva "had anti-ship missiles and surface-to-air missiles, but was not equipped with Russia's latest generation Kalibr cruise missiles or hypersonic missiles." Indian Navy warships are equipped with the best available technology, and now carry "Barak 1 and Barak 8 surface-to-air missiles, along with a close-in weapons suite (CIWS) to tackle aerial and cruise missile threats". India developed the Barak missile range in collaboration with Israel. The understandable danger from an Indian perspective is that China and Pakistan could foment a two-front war on India. China has made considerable use of Pakistan as its proxy against India, stirring an already fiery political and military rivalry.

Given the escalating climate and Pakistan's stockpile of anti-ship missiles, India must derive critical lessons from the sinking of the Moskva, and aim to fortify its Naval fleet. According to a report published in DefensePost, Pakistan has developed the Harba anti-ship missile, "a non-nuclear, fire-and-forget" weapon system. Harba was developed from the Babur family of missiles by the state-owned Global Industrial Defence Solutions. The medium-range ship-launched cruise missile can strike land and sea targets up to 280 kilometers (174 miles) away, at speeds of up to 988 kilometers per hour (614 mph) in all weather conditions.

It uses a Digital Scene Matching Area Correlator camera, radar, and infrared seeker to follow and strike targets. In March 2022, Pakistan showcased its anti-ship cruise missile Harba for the first time at the Doha International Maritime Defence Exhibition and Conference (DIMDEX) in Qatar. The missile was developed for the Pakistan Navy to create an indigenous anti-ship missile solution for its vessels. With China helping to arm Pakistan's Navy to the hilt, as reported by EurAsian Times, India meanwhile, is working on its defensive strategy to protect its naval fleet in the event of a missile attack. Recently, India launched a ballistic INS Dhruv missile in 2021, operated by the National Technical Research Organisation (NTRO), to help deter a missile attack against India.

India's Crucial CHAFF System

India has reportedly devised a technology called the CHAFF system, developed by the Defence Research Development Organisation (DRDO). According to reports, the Indian Air Force [IAF] and the Navy have tied up with the Defence Research Development Organisation [DRDO] for the CHAFF technology to shield warships and aircraft against missile attacks.

It is a critical defense technology that is used to protect fighter jets and naval ships from hostile radar threats. The significance of this technology lies in the fact that very little quantity of chaff material deployed in the air acts as a decoy to deflect the enemy's missiles and ensures the safety of the fighter aircraft or naval ships. CHAFF creates a metal particle cloud around the jet or the ship and deflects missiles from it.

Using precise satellite data on incoming missiles, the CHAFF system can help to protect Indian warships and aircraft from ballistic threats. The system releases a cloud of metalized glass or

plastic rods that acts as a decoy, thereby confusing any incoming missiles, and serving as an impact point away from the warship. India is hard at work optimizing and deploying this technology within its air and naval fleets.

Nonetheless, among the learnings to be had from the Moskva sinking, speculation is still rife that the US had provided Ukraine with precise satellite coordinates, which enabled them to bombard the Moskvyia with missiles. Unfortunately, any weapons defense system would struggle against a torrent of attacks such as this, including the powerful Russian S-400. Therefore, India will need to quickly learn from Russia's mistakes if it is to be prepared for its impending threats such as this.

<https://eurasianimes.com/pakistans-harba-missile-how-is-indian-navy-preparing/>

Science & Technology News



Fri, 29 Apr 2022

ISRO Chairman visited LPU to inaugurate International Conference on Small Satellites

Chairman, Indian Space Research Organisation (ISRO), and Secretary, Department of Space (Govt. of India), Shri S. Somanath visited Lovely Professional University, today, where he inaugurated its second International Conference on Small Satellites (ICSS-2022) at Shanti Devi Mittal Auditorium. The top 30 space scientists of India are participating in this conference from different related sectors of the country. Addressing LPU students, Chairman ISRO invoked them to work on various opportunities available in the space sector at present. The order of the day is for various applications, businesses, and diverse benefits from this sector. He emphasized to have focus on applications with the ability to manufacture. Here, he took the example of vast communications development through mobiles utilization in India but not its manufacturing.

Continuing, ISRO Chairman said, "Now, we want to build our own space sector for autonomy and a big economy in the sector." Invitingly, he asked LPU students to come forward, work hard; make a mark, and build India strong in the space sector; ISRO is with you. Each one of you has potential to be a top person in the world, just decide "I can, I will". Here, he made an open call to all to be a great space scientist by bringing forth innovative ideas to work upon. "It is time to develop space entrepreneurship in India, and conferences like this can boost this all. ISRO is with you as a firm supporter for providing knowledge, facilities and equipment to further work upon your valuable ideas." Lamenting the weak budget in comparison to developed countries in the Indian space sector, he expressed the need of the private sector in the field.

At this juncture, the possibility of any of the next space centres was guessed to be at the LPU campus. During the un-ribboning ceremony of the CD of the conference proceedings, ISRO Chairman was accompanied by LPU Chancellor Dr Ashok Mittal; Pro-Chancellor Mrs Rashmi

Mittal; Former Scientific Secretary (ISRO) and President of the Society for Small Satellite Systems Dr. V. Koteswara Rao; Director, Directorate of Special Projects, DRDO (Hyderabad), Dr P S R Srinivasa Sastry; and, Adjunct Professor and Advisor Centre for Space Research at LPU, Prof. DVA Raghava Murthy, who is the Former Director, Earth Observations System, ISRO HQ. Prior to this, Chancellor Dr Ashok Mittal thanked ISRO Chairman for his commitment to visit LPU and applauded ISRO for covering herculean tasks in the space sector to earn a name of the country in the world.

Mr Mittal also expressed his intent to join hands with ISRO for innovative space works. On this occasion, a large number of LPU space scientists were also awarded with Rs 1.51 Crores awards. Dr. V. Koteswara Rao asked students to learn much at the conference and become the leader in the field. Dr PSR Srinivasa Sastry informed that such conferences are to let students know about the regularly growing utilities of the space sector. In fact, ISRO performs tasks related to space based applications, space exploration and development of related technologies. It is one of six government space agencies in the world. Whereas, the Society for Small Satellite Systems is a focused forum to promote, motivate, support and encourage projects, innovations, research in the area of small satellite systems and applications.

<https://www.5dariyanews.com/news/369338-ISRO-Chairman-visited-LPU-to-inaugurate-International-Conference-on-Small-Satellites>

