

# NEWSLETTER

### **INDIAN SPACE ASSOCIATION**



## **EXPLORING THE FINAL FRONTIER:**

ISpA Newsletter Unveils Future of Sustainable Space Exploration





Welcome to **ISpA Newsletter**, a trusted conduit for illuminating the latest strategic endeavours, technological innovations and industry insights shaping the future of sustainable space exploration.



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### **MESSAGE FROM DG-ISpA**

September was an eventful month for ISpA. Along with our Chairman, Shri Arun Ramchandani, I had the privilege of meeting Dr. V. Narayanan, Chairman, ISRO and Secretary DOS, to brief him on various aspects on behalf of all our members and to invite him to the upcoming India International Space Conclave (IISC) 2025, scheduled for 18-19 November at The Lalit, New Delhi.

I take this opportunity to congratulate our members for their outstanding achievements, this month:

- AgniKul Cosmos commissioned India's first large-format additive manufacturing facility for aerospace and rocket
- ESRI India and Dhruva Space signed an MoU to integrate 'AstraView'
- · Kepler Aerospace signed an MoU with Lets Comm, Taiwan
- OrbitAID Aerospace inaugurated India's largest 6,500 sq. ft. R&D facility
- Skyroot Aerospace was allotted 300 acres of land by the Andhra Pradesh Government
- Spacefields raised \$5 million (₹42 crore) in a Pre-Series A investment round
- ViaSat for organising the Space for Good India Challenge 2025.

The Italy-India road show was coordinated by Team ISpA across various Indian cities. Our special thanks to our members who enthusiastically hosted and briefed the Italian industry delegation at their facilities or participated at the discussions in Delhi. Throughout this month, I had the opportunity to visit the facilities of our members ie Tata Advanced Systems Limited (TASL), OrbitAID, Astrome, and GalaxEye, and to participate in several key industry events — including ViaSat 'Space for Good' India Challenge, CII Space Conference, the Entrepreneur Summit.

I also had the honour of moderating and addressing discussions on several strategic themes, such as:

- "Accelerating Indigenous Technology Development" organised by the Southern Command of the Indian Army.
- "Threat Landscape & Strategic Imperatives" at the Gen S.F. Rodrigues Memorial Seminar.
- "Bridging the Gaps in Achieving India's Space Vision" during the CII International Conference on Space 2025.

Additionally, I addressed and briefed senior officers of the three Services on Space aspects during the "Combined Operational Review and Evaluation" (CORE 2025) program in USI.

Preparations for the IISC 2025 are in full swing, and Team ISpA is working diligently to deliver an enriching and impactful event. In the coming weeks, my colleagues will be reaching out to you to seek your active participation and valuable contributions. I encourage all members and partners to engage actively in the lead-up to this flagship event. Please feel free to reach out to the ISpA team with your queries, ideas, and suggestions — your participation will be key to making this international Conclave a success.

Lt Gen A K Bhatt PVSM UYSM AVSM SM VSM (Retd) Director General, Indian Space Association (ISpA) (Former DGMO, MS & GOC 15 Corps)













## HIGHLIGHTS OF THE MONTH

- AGNIKUL COSMOS COMMISSIONED THE NATION'S 1ST LARGE-FORMAT ADDITIVE MANUFACTURING FACILITY FOR **AEROSPACE & ROCKET SYSTEMS**
- ESRI INDIA AND DHRUVA SPACE SIGNED AN MOU TO **INTEGRATE ASTRAVIEW, POWERED BY A CONSTELLATION** OF 200+ EO SATELLITES ACROSS DIVERSE RESOLUTIONS
- KEPLER AEROSPACE SIGNED AN MOU WITH LETS COMM, **TAIWAN**
- ORBITAID AEROSPACE OPENED INDIA'S LARGEST 6500 SO FT R&D FACILITY
- SKYROOT WAS ALLOTTED 300 ACRES OF LAND BY THE ANDHRA PRADESH GOVERNMENT IN TIRUPATI DISTRICT
- SPACE FIELDS RAISED \$5 MILLION (₹42CR) PRE-SERIES A **INVESTMENT**
- SPACE FOR GOOD INDIA CHALLENGE 2025: ORGANISED BY VIASAT WAS HELD IN DELHI











## HIGHLIGHTS OF THE MONTH

- DG ISPA LT GEN A K BHATT (RETD) & CHAIRMAN ISPA SHRI ARUN RAMCHANDANI MET DR. V. NARAYANAN, CHAIRMAN, **INDIAN SPACE RESEARCH ORGANIZATION (ISRO)**
- ITALY INDIA AEROSPACE ROADSHOW 2025
- DG ISPA MODERATED SESSIONS FOR THE CONFEDERATION OF INDIAN INDUSTRY- INTERNATIONAL CONFERENCE ON SPACE 2025 (8-9 SEPT, BENGALURU)
- DG ISPA ADDRESSED SENIOR OFFICERS OF THE THREE SERVICES DURING THE COMBINED OPERATIONAL REVIEW **AND EVALUATION PROGRAM (CORE 2025)**
- DG ISPA ATTENDED THE ENTREPRENEUR SUMMIT 2025. HELD AT BHARAT MANDAPAM, NEW DELHI
- DIRECTOR ISPA ANAND RAO, ADDRESSED PARTICIPANTS AT THE "WORKSHOP ON QUANTUM COMPUTING FOR SPACE APPLICATIONS" AT AISST AMITY. AMITY UNIVERSITY.
- DG ISPA VISITED TATA ADVANCED SYSTEMS LIMITED (TASL), ORBITAID, ASTROME'S NEW FACILITY, GALAXEYE













#### **AGNIKUL COSMOS**

AgniKul Cosmos commissioned the nation's 1st large-format additive manufacturing facility for Aerospace & rocket systems. A true milestone in making space faster, affordable & self-reliant. By integrating design, simulation, 3D printing, post-processing, and testing under one roof, this facility enables faster development cycles, lower costs, and the ability to produce flight-ready hardware in just days.

It also unveiled its ambitious leap into the global reusable rocket race, announcing plans to build a Falcon 9-like launch vehicle that is fully reusable and cost-efficient at the International Astronautical Congress (IAC) 2025 in Sydney, Australia, where it also highlighted its recent success in securing multiple patents across the US, Europe, and India.



#### BHARAT FORGE

Bharat Forge's subsidiary, Agneyastra Energetics Ltd (incorporated through Kalyani Strategic Systems Ltd., a whollyowned subsidiary of Bharat Forge), signed an agreement with Andhra Pradesh Industrial Infrastructure Corporation Ltd (APIICL) for the purchase of a land parcel measuring about 949.65 acres in Madakasira, Anantapur district.

The land will be used to develop an end-to-end defence energetics manufacturing complex. The facility will include a high explosives manufacturing plant, an ammunition filling plant, and a gun propellant facility. Provisions are also being made for future expansion into energetics for rockets, missile systems, space launch vehicles, and advanced energetics.





### **DHRUVA SPACE**

Dhruva Space signed an MoU with ESRI India to integrate AstraView, powered by a constellation of 200+ EO satellites across diverse resolutions. ESRI India's ArcGIS platform will enable seamless access to multi-sensor satellite data within advanced GIS workflows. This collaboration, sealed at the ESRI India User Conference 2025 signals the fusion of Space-powered data with GIS-driven intelligence, ushering in a future where location isn't just a context, it's advantage.



#### **ESRI INDIA**

ESRI India signed an MoU with Dhruva Space to integrate AstraView, powered by a constellation of 200+ EO satellites across diverse resolutions. ESRI India's ArcGIS platform will enable seamless access to multi-sensor satellite data within advanced GIS workflows. This collaboration signals the fusion of Space-powered data with GIS-driven intelligence.

ESRI India base maps were incorporated into the Department of Posts, India's DIGIPIN web application. This collaboration is addressing last mile connectivity, emergency response faster, more reliable, and accessible nationwide.



#### HAL

Hindustan Aeronautics Limited (HAL), signed a technology transfer agreement with IN-SPACe, NSIL, and ISRO for the Small Satellite Launch Vehicle (SSLV) - a three-stage launch vehicle designed to place satellites weighing less than 500 kg into LEO. The agreement grants HAL a non-exclusive, non-transferable licence to the SSLV technology, covering design, manufacturing, quality control, integration, launch operations, post-flight analysis, training, and support. HAL will be responsible for mass production of SSLVs to cater to domestic and global demand.





#### **KEPLER AEROSPACE**

Kepler Aerospace signed an MoU with Lets Comm, Taiwan. Both companies will mutually leverage their worldwide ground station facilities, integrated via Kepler's Unified Command Center. This enables operators to command satellites and downlink data seamlessly, anywhere in the world. Together, Kepler and Lets Comm will co-develop advanced EO and ISR services, delivering real-time intelligence to defence, commercial, and enterprise users in Taiwan.

The partnership includes the joint establishment of a major national ground station, enhancing Taiwan's sovereign access to secure satellite communications and ISR data.

Beyond infrastructure, both teams will exchange technical knowledge, align operations, and pursue joint market opportunities - driving deeper levels of cross-border innovation and trust.

This partnership ensures: **Connectivity** – Low-latency, secure satellite communication. **Efficiency** – Unified global command and control for smoother operations. **Services** – Expanded ISR and remote sensing offerings in Taiwan and beyond. Innovation – Joint advancements in ground-space integration.

With this MoU, Kepler Aerospace strengthens its presence in Asia and sets the stage for a new era of India - Taiwan cooperation. This partnership will become backbone of a more secure, connected, and future-ready space ecosystem supporting governments, enterprises, and national resilience in the years ahead.





#### ORBITAID AEROSPACE

OrbitAID Aerospace's expansive 6500 sq.ft R&D facility which is India's largest commercial state-of-the-art center was inaugurated by ISRO Chairman Dr Narayanan V. This facility is designed to elevate capabilities in on-orbit refuelling and satellite servicing. It is a beacon of innovation: Rendezvous Proximity Operations and Docking (RPOD) testbed for developing and validating autonomous rendezvous and docking maneuvers. An advanced fuel transfer lab enabling safe, efficient, and leak-proof propellant transfer technology development.

The ceremony was attended by:

- Lt Gen Anil Kumar Bhatt (retd), DG ISpA
- His Excellency Achim Burkart, Consul General of the Federal Republic of Germany
- His Excellency Giandomenico Milano, Consul Gen of the Italian Republic
- His Excellency Beat Schmid, Deputy Consul Gen of the Swiss Confederation
- Sivarajah Ramanathan, MD & CEO of StartupT
- N Sudheer Kumar N, Former Director, CBPO ISRO
- Ambika Banotra, Chief Representative, NRW Global Business
- Shreya Ganesh, UIV Together

OrbitAid is fueling India's commitment to a circular space economy—where innovation, collaboration, and operational resilience define the new frontier.



### **SATSURE KALIEDIO**

<u>Partnership</u> with <u>HydroFarm</u>: Satsure announced a strategic collaboration with HydroFarm to support plantation monitoring and data management as part of the Greening Saudi Initiative. By integrating EO data, Al-powered analytics, and IoT, this partnership will track plantation survival and health while contributing to Saudi Arabia's Vision 2030 sustainability goals.

**Best Firm for Data Scientists:** At Cypher 2025 by AIM, SatSure was certified as a best firm for data scientists to work for. This recognition reflects its commitment to fostering an environment where data scientists thrive while solving complex challenges with decision intelligence.



<u>Top 10 in DPI4PP Challenge</u>: SatSure was recognized among the Top 10 Global Innovators in the DPI for People & Planet Innovation Challenge for the conception and development of the Digital Water Stack (DWS) — a breakthrough framework to address global water sustainability challenges.

<u>ThinkAg Participation:</u> SatSure participated in ThinkAg, hosting and contributing to roundtable sessions on applying Earth Observation for agriculture. We engaged with industry leaders, domain experts, peers, agri-tech startups, and policymakers to frame how EO can address real-world farming challenges.

**IAC Representation:** Leadership team — Prateep Basu, Abhishek Arora along with KaleidEO's Avinash Bagali, and Ankur Singhai — represented SatSure at the 76th International Astronautical Congress (IAC 2025) in Sydney during 29 Sept — 3 Oct. This positions the company to engage EO experts at the global stage on sustainability, EO data regimes, and Earth resilience strategies.



### **SKYROOT AEROSPACE**

Skyroot Aerospace was allotted 300 acres at Routhusuramala, BS Puram and Kottapalem villages in Tirupati district, by the Andhra Pradesh Government for setting up an integrated rocket manufacturing, assembly, testing and storage facility unit. With an investment of ₹400 crore, the project is expected to create 300 jobs. The spacetech startup is getting ready for its maiden orbital launch and so far has raised \$95 million in funding.

Skyroot also featured in latest documentary on Prime Minister Narendra Modi 'Karmayog' on India's national TV Doordarshan.



#### **SUHORA**

Suhora signed an agreement with Satellogic to deliver high-resolution Earth observation services in India and Nepal. With this partnership, Suhora users have gained unmatched access to Satellogic's cutting-edge satellite constellation, empowering solutions for environmental challenges and serving broader National interests. This collaboration is set to transform access to Earth Observation data by offering cost-effective, high-frequency, and low-latency geospatial intelligence. It will empower urban planning, disaster response, climate action, infrastructure development, and national security initiatives.

Suhora renewed its MoU with Thiagarajar College of Engineering (TCE), Madurai that aims to promote innovation and talent development in the Geospatial domain.





### **SPACEFIELDS**

Speacefields raised \$5 million (₹42cr) Pre-Series A investment led by Globaz Technologies Pvt Ltd, co-led by Rockstud Capital and Venture Catalysts++, India's 1st Multi-Stage VC, with participation from Rainmatter by Zerodha, VC Grid, Burla Angel Investor Network, Faad Capital, SIDBI(Small Industries Development Bank of India), o2 Angels Network, India's First DeepTech-Focused Angel Network, MeitY Startup Hub and others. It had earlier raised \$1.3 million in funding from Jamwant Ventures, HVB 88 Angels LLC, Samarthya Investment Advisors, VINNERS and others in 2024.



### **VIASAT INMARSAT**

Mayank Golechha won Viasat: Space for Good India Challenge 2025 with Superconducting Electromagnetic Rings in Space Project. The winner received the first prize of ₹400,000, followed by 19-year-old Bhoomi Raiyani, from Nirma University, and 18-year-old Arunteja Jarupula, from IIT Kanpur, who won second and third place prizes of ₹250,000 and ₹100,000 for their concepts, respectively. Bhoomi's idea named 'Plasma Pathways', focused on a future space communication concept, while Arunteja's project named 'STELLAR', proposed establishing orbital space settlements to serve as manufacturing hubs. Winners seek to shape India's SpaceTech future and contribute to our journey towards a \$40B space economy by 2040.



Suhora and Thiagarajar College of Engineering,

Madurai, have renewed their MoU, further strengthening their industry–academia partnership.

### MEMBERS BULLETIN





DG ISpA Lt Gen Anil Kumar Bhatt (retd) & Chairman ISpA Shri Arun Ramchandani met Dr. V. Narayanan, Chairman, Indian Space Research Organization (ISRO)

Lt Gen Anil Kumar Bhatt (retd), DG ISpA & Shri Arun Ramchandani, Chairman ISpA had insightful conversation with Dr. V. Narayanan, Chairman ISRO - Indian Space Research Organization. They shared updates on ISpA's initiatives driving the private space ecosystem, expressed gratitude for ISRO's unwavering support to India's growing space industry, and extended a warm invitation to him for the 'Indian International Space Conclave 2025' (IISC). With ISRO's mentorship and industry's innovation, the journey towards making India a global space leader is getting stronger.











### DG ISpA moderated a dynamic session on accelerating indigenous technology development organised by the Southern Command of the Indian Army

Defence Tech 2025 Seminar – STRIDE25 was organised by the Southern Command of the Indian Army at RSAMI, Pune. It was inaugurated in presence of Defence Secretary Shri Rajesh Kumar Singh, IAS (Chief Guest), Lt Gen Dhiraj Seth PVSM AVSM GOC-in-C Southern Command, senior Army leadership, and industry representatives, the seminar was held under the theme "Atmanirbharta through Partnership – Industry, Academia, Armed Forces."

Lt Gen Anil Kumar Bhatt (retd) DG ISpA, moderated a dynamic session on accelerating indigenous technology development through: • Reverse engineering • Industry-funded academic research • Defence research labs & PSUs.

The distinguished panel featured: Lt Gen PR Shankar (Retd), IIT Madras; Mr. Prateek Kishore, DG Armament & Combat Engg, DRDO, Ministry of Defence, Govt. of India; Satish Bharathan, VP, Larsen & Toubro; Munjal Shah, MD, Paras Defence & Space Technologies Ltd.

Defence Secretary felicitated DG ISpA and in his keynote address and remarked "technological superiority and industrial strength often determine outcomes in warfare." He also reaffirmed India's vision of becoming a \$30 trillion economy by 2047 through a strong defence ecosystem.





DG ISpA participated in the Gen S F Rodrigues Memorial Seminar in Pune. Moderated a session on "Threat Landscape & Strategic Imperatives of Non-Contact, Non Kinetic Warfare and Leveraging Non-Contact Kinetic Capabilities"

DG ISpA, Lt Gen Anil Kumar Bhatt (retd) participated in the Gen S F Rodrigues Memorial Seminar in Pune. He moderated a session on "Threat Landscape & Strategic Imperatives of Non-Contact, Non Kinetic Warfare and Leveraging Non-Contact Kinetic Capabilities for the Indian Armed Forces" focused on the space and cyber dimensions, exploring the evolving strategic landscape.

The session brought together veterans, military officers, industry leaders, and academia, facilitating meaningful discussions on emerging threats and opportunities in non-kinetic domains. ISpA continues to champion dialogue at the intersection of space, technology, and national security, strengthening India's capabilities in modern defense strategy. Indian Army in conjunction with the Centre For Land Warfare Studies (CLAWS) conducted the 3rd edition on 19th September. The prestigious event paid tribute to General SF Rodrigues, the former COAS.





<u>Director ISpA Anand Rao, addressed participants at the "Workshop on Quantum Computing for Space Applications" at AISST AMITY, Amity University.</u>

Exploring the Future of Space Tech through Quantum Computing; Director ISpA, Anand Rao addressed participants at the "Workshop on Quantum Computing for Space Applications" at AISST AMITY, Amity University.

He highlighted the growing importance of quantum technologies in space applications and emphasized setting realistic, achievable goals for both the near and long term to drive sustained progress. The workshop is a significant step in strengthening collaboration between academia, industry, and government, fostering innovation in India's space ecosystem.











<u>Lt Gen Anil Kumar Bhatt (retd), DG ISpA, Moderated Sessions for the Confederation of Indian Industry- International Conference on Space 2025 (8-9 Sept, Bengaluru)</u>

At the Confederation of Indian Industry- International Conference on Space 2025 (8-9 Sept, Bengaluru), Lt Gen Anil Kumar Bhatt (retd), DG ISpA moderated a session on "Bridging the Gaps in Achieving India's Space Vision" under the aegis of ISRO and IN-SPACe and NSIL.

With leading voices from ISRO, NSIL, Hindustan Aeronautic Limited, Godrej Aerospace, INSPACe & Azista Aerospace, the panel explored: Clearer policies & regulations, Greater access to private capital, Cutting-edge R&D infrastructure, Building skilled talent for the future. The session highlighted action-driven strategies to accelerate reforms, fuel deep-tech innovation, and to unlock India's ambition of becoming a global space powerhouse.





<u>ISpA participated in the Future Technologies Summit – Space Conference held on 23rd Sept 2025 at the India International Centre, New Delhi.</u>

It was a privilege for ISpA to participate in the Future Technologies Summit – Space Conference held on 23rd September 2025 at the India International Centre, New Delhi. Lt Gen Anil Kumar Bhatt (retd), DG ISpA delivered the Keynote Address, setting the tone for the day with insights on India's evolving space ecosystem and the transformative role of emerging technologies.

Gp Capt TH Anand Rao, Director ISpA, contributed as a panelist in the discussion on "Future of Space in India", bringing perspectives on policy, industry collaboration, and the innovation roadmap ahead. The summit brought together distinguished leaders, innovators, and industry stakeholders to deliberate on opportunities and challenges shaping India's space future.

We thank the organizers, partners, and participants for fostering such a vibrant dialogue on advancing India's space journey.





DG ISpA Lt Gen A K Bhatt (retd) addressed senior officers of the three Services during the Combined Operational Review and Evaluation Program (CORE 2025)

DG ISpA Lt Gen Anil Kumar Bhatt (retd) addressed senior officers of the three Services during the Combined Operational Review and Evaluation Program (CORE 2025) held at the United Service Institution of India (USI). His address focused on space capabilities for the Armed Forces, led to an engaging discussion on leveraging space-based assets and technologies to strengthen India's defence preparedness and joint operations. ISpA remains committed to working with stakeholders in advancing India's indigenous space ecosystem and enabling capabilities critical for national security.





#### ISpA attended the inaugural ceremony of OrbitAID Aerospace 's new R&D facility

ISpA was delighted to be part of the inaugural ceremony of OrbitAID Aerospace 's new R&D facility in Bengaluru. This facility will advance India's capabilities in sustainable space operations. The event was graced by Dr. V. Narayanan, Secretary Department of Space (DoS) & Chairman ISRO, as the Chief Guest, and brought together distinguished leaders and delegates from ISRO, IN-SPACe, global space companies, foreign embassies, policymakers, trade bodies, and defence officials.

On this occasion, DG ISpA Lt Gen Anil Kumar Bhatt (retd) shared his perspective on "Building Synergy through Public-Private Partnerships in India's Space Sector", emphasizing:

- The importance of fostering indigenous technology to strengthen self-reliance.
- Unlocking growth opportunities through PPP models to accelerate space innovation.

ISpA congratulates OrbitAID on this remarkable achievement and looks forward to continued collaboration towards building a stronger and globally competitive Indian space sector.





#### DG ISpA Lt Gen A K Bhatt (retd) visited Tata Advanced Systems Limited (TASL)



DG ISpA Lt Gen Anil Kumar Bhatt (retd), visited Tata Advanced Systems Limited (TASL). Rakesh Bhan and his team showcased technologies in defense and shared thoughts on India's space ecosystem and way forward. This visit highlights ISpA's commitment to fostering strong industry partnerships and advancing India's journey towards a self-reliant and innovative space sector.

#### **DG ISpA visited Astrome's new facility**



DG ISpA, Lt Gen Anil Kumar Bhatt (retd), visited Astrome's new facility and interacted with the team. From being incubated at the Indian Institute of Science (IISc), Bangalore to now operating from its own cutting-edge facility, Astrome has come a long way. Led by the visionary team Dr Neha Satak (Cofounder & CEO), Prasad Bhat (Co-founder, Chairman & CTO), and Kumaran Venkatesh (Venki) (President), Astrome continues to pioneer innovation in India's deep-tech and space ecosystem. ISpA is proud to witness this growth and congratulated the entire Astrome team on this new chapter in their journey.



#### DG ISpA, Lt Gen Anil Kumar Bhatt (retd) visited GalaxEye's new complex.

DG ISpA, Lt Gen Anil Kumar Bhatt (retd). visited GalaxEye's new complex. The expanded facility not only provides a larger and more advanced workspace but also will house a dedicated satellite testing facility. marking noteworthy а advancement in GalaxEve's arowth journey. ISpA is proud of the progress of its members and congratulates the entire GalaxEve team on this new chapter. We forward to their continued contributions for strengthening India's space ecosystem.







#### ISpA was pleased to interact with Astrobase Space Technologies

ISpA was pleased to interact with Astrobase Space Technologies, an emerging space-tech company building India's next-generation orbital launch systems powered by Full-Flow Staged Combustion (FFSC) engines. Their vision is to deliver cost-efficient, reliable, and sovereign access to space.

We look forward to welcoming Astrobase as a member of ISpA and aligning with them to advance India's space ecosystem.



<u>Director General ISpA, Lt Gen Anil Kumar Bhatt (retd) attended the Entrepreneur Summit 2025, held at Bharat Mandapam, New Delhi on 23rd September 2025</u>

Director General ISpA, Lt Gen Anil Kumar Bhatt (retd) attended the Entrepreneur Summit 2025, held at Bharat Mandapam, New Delhi on 23rd September 2025.

DG ISpA joined the panel discussion on "The New Frontier: Powering India's SpaceTech Startup Revolution", where he shared ISpA's perspectives on:

- Key policy & regulatory enablers for India's private space ecosystem
- Strengthening funding channels & talent pipelines for startups
- Building synergies between young ventures and established players
- Strategies to help Indian startups scale globally and compete with international counterparts

The session brought together leaders, investors, and innovators to explore opportunities across launch services, satellite applications, data-driven solutions, and more, reaffirming India's potential to emerge as a global hub for space tech innovation.

We thank the Entrepreneur Summi 2025 team for curating this impactful platform and look forward to continued dialogue to accelerate India's SpaceTech revolution.







#### Viasat: Space for Good India 2025 Challenge Finals

Mayank Golechha from Birla Institute of Technology and Science, Pilani won Viasat: Space for Good India Challenge 2025 for his project on 'Superconducting Electromagnetic Rings in Space', with prize money worth ₹400,000.

Runners-up prize was awarded to:

- 19 years old **Bhoomi Raiyani** from Nirma University won second prize of ₹250,000 for 'Plasma Pathways', focused on a future space communication concept
- 18 years old **Arunteja Jarupula** from IIT Kanpur won ₹100,000 for his project named 'STELLAR', that proposed establishing orbital space settlements to serve as manufacturing hubs

DG ISpA, Lt Gen Anil Kumar Bhatt (retd) was honoured to serve on the esteemed jury panel alongside:

- Dr. Col. Ashwini Bhardwaj Officer on Special Duty, Ministry of External Affairs of India
- Dr. Vinod Kumar Director, Promotion Directorate, IN-SPACe
- Pawan Chandana Co-Founder & CEO, Skyroot Aerospace
- Ramesh Soundararajan Director, Engineering, Viasat
- Ms. Revathi MANNEPALLI Joint Wireless Advisor, WPC, Ministry Of Communications
- Prabhat Dikshit Dy. Director General (SMC), Dept.of Telecommunications, Govt. of India
- Sonali Nanda Deputy Director in Program Management and Authorisation Directorate, IN-SPACe

**In a video address, Shri Jyotiraditya M. Scindia, Hon'ble Minister of Communications and Development of North Eastern Region said,** "Space—the final frontier—is now within mankind's reach. You - the budding entrepreneurs with your wonderful ideas and platforms, are bringing space much closer to us through agriculture, education and more. Congratulations to all the participants and may you move from strength to strength and lead India's flag as we move on to become a developed nation."

Congratulations to the winners and all participants for showcasing the creativity and passion that will shape India's SpaceTech future.







#### **ITALY - India Aerospace Roadshow 2025**

Italy-India Aerospace Roadshow 2025: Fueling Future Collaborations! 🝱 🦂 💵

It was a incredible start to the **Roadshow in Hyderabad**. ISpA was proud to be part of this multicity initiative, organized by the ITA - Italian Trade Agency and the Agenzia Spaziale Italiana (ASI), Indian Space Research Organisation (ISRO) and IN-SPACe. The **Hon'ble Minister for IT & Industries, Sri Sridhar Babu Duddilla, Government of Telangana,** welcomed the Italian Aerospace delegation to Telangana's thriving aerospace & defence ecosystem.

ISpA was proud to facilitate exclusive visits and presentations at our pioneering member companies:

- **Dhruva Space** a full-stack space engineering solutions provider building small satellites and related services
- Astra Microwave Products Limited advanced RF & microwave systems for space & defence
- **Skyroot Aerospace** a pioneer in India's private space sector, developing a series of small-lift launch vehicles for the small satellite market

The **Bengaluru roadshow** marked a transformative phase in the Italy-India Space Mission 2025, strengthening landmark cooperation between our two space-faring nations. The Italian aerospace delegation explored India's Silicon Valley of Space through exclusive visits facilitated by ISpA to our pioneering member companies:

- Bellatrix Aerospace advanced propulsion & satellite solutions
- **Pixxel** hyperspectral imaging constellation
- Ananth Technologies end-to-end aerospace manufacturing
- **GalaxEye** multi-sensor imaging for Earth observation

H E Antonio Enrico Bartoli, Ambassador of Italy to India hosted a networking reception, attended by Shri Pawan Goenka, Chairman iNSPACe. A roundtable featuring Tata Advanced Systems Limited, Elena Geo Systems Private Limited, Centum Electronics Ltd, and Larsen & Toubro was also hosted. These interactions showcased India's thriving private space ecosystem and its growing role in global partnerships. The Bengaluru chapter closed with a sincere thanks to Antonietta Baccanari, Trade commissioner, ITA - Italian Trade Agency & Director of ICE Delhi, & Agenzia Spaziale Italiana, and all partners for making this mission possible.



#### **ITALY - India Aerospace Roadshow 2025**

#### Italy-India Aerospace Roadshow 2025: New Delhi Chapter 💴 🛭

The multi-city Italy-India Aerospace Roadshow concluded in NewDelhi on 26th September, marking a historic milestone in Indo-Italian space collaboration. ISpA was immensely proud to steer critical dialogue on Downstream Space, leading a pivotal panel on "Earth Observation and Data-Driven Applications: Unlocking India–Italy Opportunities".

The session was moderated by **Air Vice Marshal Paramjit Malhi Retd, VP, Tata Advanced Systems** Limited and featured industry leaders:

- Krishanu Acharya, Suhora
- Manan Suri, CYRAN AI Solutions
- Federica Fistarollo, Stellar Project
- Lisa Maretto, Officina Stellare S.p.A
- Davide D'Aria, Aresys
- Antonella Pivaa, EIE GROUP Srll

Discussions highlighted how cutting-edge EO technologies and data-driven solutions can drive innovation and collaboration, showcasing the successes of Italian companies like Nano-Tech SpAA ,Leonardoo, Thales Alenia Spacee, Leaf Space, and Zoppas Industries Heating Element Technologiess Industries in India.

A highlight of the day was the **delegation's visit to Bharat Electronics Limitedd (BEL) in Ghaziabad.** BEL hosted an engaging roundtable, showcasing their defence and electronics excellence and opening doors for future partnerships. A heartfelt thanks to BEL and its team for their hospitality and support witnessing their expertise and achievements was truly inspiring.

The Italy-India Aerospace Roadshow, concluded with a strong consensus: the stage is set for deeper, strategic collaborations. As the apex industry body, ISpA- Indian Space Association remains committed to enabling these dialogues to transform into enduring commercial partnerships within India's vibrant space ecosystem.









#### CELEBRATING A DECADE OF INDIA'S FIRST ASTRONOMY OBSERVATORY ASTROSAT | 28 SEPTEMBER 2025

AstroSat, India's first multi wavelength space observatory dedicated for astronomy, completed a decade filled with groundbreaking discoveries and dedicated service to the global scientific community. AstroSat was launched aboard the PSLV-C30 on September 28, 2015 from the Satish Dhawan Space Centre. AstroSat is capable of observing the universe simultaneously in broad energy range from ultraviolet (UV), visible, and high energy X-rays rendering it a powerful tool for understanding various cosmic phenomena.

AstroSat began its scientific journey by solving a two decade old puzzle involving a red giant star unusually bright in both ultraviolet (UV) light and Infrared. Since then, it has continued to deliver remarkable results. Among its many outstanding discoveries is the detection of far-UV photons from an astonishing distance of around 9 billion light-years captured using the sharpest, wide angle UV eye in space, showing that the emission from butterfly nebula extends three times more than earlier known size, X-ray polarization studies, a star reliving its youth, merging of galaxies discovery of very fast spinning black holes and numerous other findings on X-ray emission from binary stars in the Milky way.

AstroSat is a real example of multi institute mission. In addition to major ISRO centers like URSC, LEOS, SAC, VSSC, PRL many Indian research institutes like TIFR, IIA, IUCAA have contributed to the development of four out of the five scientific payloads onboard AstroSat. UVIT and SXT also collaborated with Canadian Space Agency (CSA) and University of Leicester, UK respectively making AstroSat a true international collaboration effort.

The global nature of AstroSat becomes more prominent when we consider the users of AstroSat. AstroSat has a registered userbase close to 3400 from 57 countries world over from countries like US to Afghanistan and Angola. Within India, AstroSat has helped popularize space science, bringing astrophysics research into 132 Indian universities. About half of the observatory's users are Indian scientists and students, fostering a new generation of astronomers.









### CII INTERNATIONAL SPACE CONFERENCE 2025: SHOWCASING ISRO'S LEADERSHIP AND GLOBAL COLLABORATION | 17 SEPTEMBER 2025

The Confederation of Indian Industry (CII), in collaboration with ISRO, IN-SPACe, and NSIL successfully hosted the International Conference on Space 2025, on September 8–9, 2025 at Bengaluru, India. Themed "Harnessing Space for Global Progress: Innovation, Policy, and Growth," this two-day event solidified India's position as a global space leader by fostering innovation, strengthening indigenous capabilities, and promoting international collaboration. This conference brought together 650+ delegates, government leaders, industry stalwarts & global experts.

On September 8, 2025, the conference began with an inaugural session. A video message by Hon'ble Union Minister Dr. Jitendra Singh and key addresses were delivered by Dr. V Narayanan, Chairman, ISRO & Secretary, DoS, Air Marshal Tejinder Singh AVSM VM, Air Officer Commanding-in-Chief, Training Command, Mr Mohan, CMD, New Space India Limited (NSIL).

Highlighting recent milestones, the Minister referred to the success of Chandrayaan-3, which placed India among the leading spacefaring nations by becoming the first to land near the lunar south polar region. He also pointed to the achievements of Group Captain Shubhanshu Shukla, the first Indian to travel to the ISS, and outlined India's upcoming exploration missions to Moon, Mars and Venus, alongside the human spaceflight programme Caganyaan.

Dr. V. Narayanan emphasized role of reforms initiated under Hon'ble Prime Minister Narendra Modi's leadership which led to 350+ startups actively engaged in space related activities. He noted that the true value of space lies in its applications across everyday life - from agriculture and health to education, urban development, and governance.

Special felicitations were extended to astronauts Grp Capt Shubhanshu Shukla and Grp Capt Prasanth Balakrishnan Nair.

Inaugural session was followed by engaging discussions on bridging gaps in achieving India's space vision, the private sector's role in accelerating the NewSpace economy, and strategies for self-reliance through indigenous capabilities.

On September 9, 2025, sessions explored the space economy, delving into policy frameworks, regulatory developments, and opportunities for startups and international partnerships, with Denmark as the Guest Country.

The conference served as a dynamic platform to showcase ISRO's pivotal contributions to India's space advancements, alongside the instrumental roles of IN-SPACe and NSIL in nurturing a thriving ecosystem for startups, academia, and industry.







### TECHNOLOGY TRANSFER AGREEMENT SIGNED FOR SMALL SATELLITE LAUNCH VEHICLE (SSLV) | 11 SEPTEMBER 2025



A technology transfer agreement was signed on September 10, 2025 between NewSpace India Limited, ISRO, IN-SPACe & Hindustan Aeronautics Limited (HAL) for the transfer of the Small Satellite Launch Vehicle (SSLV) technology at ISRO Headquarters, Bangalore.

The SSLV is a three-stage all-solid vehicle designed to launch satellites weighing up to 500 kg into Lower Earth Orbit (LEO). SSLV was developed by ISRO as a quick turnaround, on-demand launch vehicle that is amenable to industrial production and is targeted to cater to the global small satellite launch vehicle market. It can be launched from Sriharikota for inclined launches and also at the upcoming new launch site in Kulasekarapattinam for polar launches.

Shri Jayakrishnan S, CEO (Bangalore Complex)-HAL, Shri A. Rajarajan, Director, VSSC/ISRO, Shri M. Mohan, CMD, NSIL and Shri Rajeev Jyoti, Director (Technical), IN-SPACe, signed the agreement in the presence of Dr. V. Narayanan, Secretary, DOS / Chairman, ISRO, Dr. Pawan Kumar Goenka, Chairman, IN-SPACe, Dr. D. K. Sunil, CMD, HAL, and senior officials of HAL, ISRO, IN-SPACe & NSIL. The SSLV Technology Transfer Agreement is a major milestone enabled by the space-sector reforms announced by the Government of India. The successful commercialization of SSLV is expected to boost the Indian space ecosystem and meet the national and international demand for small satellite launch services.





### VISIT OF BATCH-4 STUDENTS UNDER NORTH EAST STUDENTS' PROGRAMME FOR AWARENESS, REACH, AND KNOWLEDGE ON SPACE (NE-SPARKS) PROGRAMME | 11 SEPTEMBER 2025

The North East Students' Programme for Awareness, Reach, and Knowledge on Space (NE-SPARKS) programme is an initiative launched by ISRO, NEC and State Governments of North Eastern region. This programme was conceptualized following the directives of the Honourable Union Home Minister and President of the NESAC Society, Shri Amit Shah, during the 12th meeting of the NESAC Society.

As part of this programme, total 800 students in 8 batches (100 students per batch) from eight states of NER visit ISRO Centres in Bengaluru. The visit of the fourth batch consisting of 99 students was successfully conducted on August 28-29, 2025. In total, 400 students from NE region visited ISRO Centres in Bangalore till date as part of NEPSARKS programme.

On the first day of their visit, students explored the facilities at ISTRAC and IDSN. During these visits, they engaged with senior scientists, gaining valuable insights into the intricacies of deep space communications. On the second day, the students visited URSC, where they received an overview of satellite integration and testing processes. The visits concluded with a trip to the Jawaharlal Nehru Planetarium, where students watched a film on the Gaganyaan mission, offering them a glimpse into India's ambitious Human Space Programme.



WATER ROCKET DEMONSTRATION BY STUDENT PARTICIPANTS



STUDENTS INTERACTION WITH DR. A. K. ANIL KUMAR, DIRECTOR, ISTRAC





### ISTRAC INAUGURATES GOLDEN JUBILEE CELEBRATIONS: 50 YEARS OF TRACKING INDIA'S SPACE ODYSSEY | 10 SEPTEMBER 2025

The ISRO Telemetry, Tracking and Command Network (ISTRAC), one of the ground segment arms of Indian Space Research Organisation (ISRO) was established on September 06, 1976. The yearlong Golden Jubilee Celebrations commenced today i.e., September 10, 2025 in Bengaluru.

ISTRAC headquartered in Bengaluru is responsible for providing ground segment network for Earth Observation, Space Science & Interplanetary Satellites and all launch vehicle Missions of ISRO and also providing support to other agencies launch vehicle missions. With stations spread across India and abroad, ISTRAC, manages deep space tracking and space situational awareness, playing pivotal role in the success of India's space endeavours. Since 1976, ISTRAC has played a key role in enabling ISRO's missions, right from early satellite launches to contemporary interplanetary exploratory missions and human spaceflight missions in the coming days.

The Golden Jubilee Celebrations was inaugurated by Dr. V. Narayanan, Secretary, Department of Space / Chairman, ISRO in the presence of eminent dignitaries including Former Secretaries, DoS/Former Chairmen, ISRO, former Director's of ISTRAC and Directors of other ISRO Centres/Units.









ISTRAC GOLDEN JUBILEE LOGO AND COFFEE TABLE BOOK RELEASE BY SECRETARY, DOS / CHAIRMAN, ISRO



# ISRO INDIAN SPACE RESEARCH ORGANISATION



Speaking on the occasion, Secretary, Department of Space / Chairman, ISRO, lauded ISTRAC's contribution to India's space programme, noting, that ISTRAC has been the silent backbone of every mission. He appreciated ISTRAC for its dedication, innovation, and resilience thus ensuring the success of ISRO's ambitious journeys, from Aryabhata to Chandrayaan, Mars Orbiter Mission and now Gaganyaan including the tracking support extended by ISTRAC to NSIL commercial missions from other space agencies. Specifically, he touched upon the efficient and excellent contributions of ISTRAC handling large number of ground stations and meticulous planning of spacecraft operation for complex missions such as Mars Orbiter Mission, Chandrayaan-1, 2, 3, SPADEX-first Docking Experiment Mission of ISRO and ISRO-NASA Synthetic Aperture Radar Mission.

On this glorious occasion, Former Secretaries, DoS/Former Chairmen, ISRO and Former Directors of ISTRAC also appreciated ISTRAC for its various achievements and recollected the fond memories of the days they had spent in ISTRAC during various space exploration missions of ISRO. The event also showcased ISTRAC's evolution from a single station at Sriharikota to a vast global network with capabilities in mission operations, deep space tracking and space surveillance.

As a part of the celebrations, a coffee table book showcasing ISTRAC's capabilities and achievements was released along with the Golden Jubilee Logo. Secretary, DoS / Chairman, ISRO also formally inaugurated ISTRAC's newly designed website "Spandan" and released the coffee table book.





### ANNOUNCEMENT OF OPPORTUNITY (AO) FOR UTILIZING CHANDRAYAAN-3 LANDER AND ROVER PAYLOADS DATA FOR SCIENTIFIC ANALYSIS | 1 SEPTEMBER 2025

The vision of Indian Space programme, initiated in 1960s, is to harness space technology for national development, while pursuing space science research and planetary exploration. Space science missions provide scientific and technological advancements and nurture interest in youth of the country towards science. The space science and exploration missions such as the Chandrayaan-1, Mars Orbiter Mission, AstroSat, Chandrayaan-2, Aditya-L1 and XPoSat missions generated valuable science data and scientific publications which provided value addition to existing knowledge about the Solar system and the Universe. One mission which stands as testimony to the capabilities and technical prowess of ISRO is the Chandrayaan-3, which achieved historic soft-landing in the Southern high latitudes of the Moon on 23rd August 2023, the day declared as National Space Day.

India's efforts to study the Moon culminated with the launch of Chandrayaan-1 in 2008. It was having an orbiter and the Moon Impact Probe (MIP). It is a maiden mission with significant international collaboration. Discovery-class results such as detection of hydration on the surface, sub-surface and exosphere, mini-magnetospheres, interaction of solar wind on the lunar surface, buried lava tube etc. provided new perspectives about the Moon. The more comprehensive mission, Chandrayaan-2 was launched in 2019 having an Orbiter, lander and rover. Since the landing attempt was not successful, in-situ investigations could not be carried out. However, the Orbiter completed 6 years of remote-sensing and continues to study the Moon from polar orbit. Global high-resolution elemental maps, unambiguous detection of water, global exospheric dynamics, microflares during the quiet-Sun period are few salient results from this mission.

The data from Chandrayaan-1 and Chandrayaan-2 Orbiter have been extensively used by Indian researchers to understand lunar surface and sub-surface, composition (elemental and mineralogy) and exosphere. These studies have provided enhanced thoughtful views regarding lunar evolutionary processes. ISRO expanded the science community by releasing data utilisation AO and currently 30 projects are running in various academic institutions. To strengthen the Indian science community for in-situ studies, Chandrayaan-3 Lander and Rover payloads data are made open to public and scientific proposals are solicited for scientific analysis.

In order to demonstrate landing on the Moon and to carry out in-situ studies, Chandrayaan-3 mission was launched on 14th July 2023. Post landing, the rover moved around the landing site and traversed a total of ~100m distance. Payloads on the Lander and Rover were deployed for in-situ investigations. The mission objectives were successfully accomplished and the payloads collected data pertaining to seismicity, thermo-physical properties, plasma environment and elemental composition of the landing region for one lunar day. The payload teams analysed the datasets and published in reputed peer-reviewed journals. The science data have been peer-reviewed by domain experts and released to public on 23rd August 2024.

To access and browse the data from PRADAN portal of Indian Space Science Data Centre (ISSDC), please visit the URL https://pradan.issdc.gov.in/ch3

#### Schedule

Deadline for submission of proposals: October 21, 2025

<u>Cover Page of the Proposal 82 KB</u>

<u>Format of the Proposal 151 KB</u>

<u>Format for Declaration 83 KB</u>





### FOUNDATION STONE LAID FOR LAUNCH PAD AT SSLV LAUNCH COMPLEX (SLC), KULASEKARAPATTINAM | 29 AUGUST 2025

The **SSLV Launch Complex** is being established as a dedicated launch complex at Kulasekarapattinam, Tuticorin Dt., Tamil Nadu, in order to meet the growing launch demands of the country, primarily for SSLV launches and for the launch activities of Non-Governmental Enterprises (NGEs). Honourable Prime Minister had earlier laid the foundation stone for the SSLV Launch Complex on February 28, 2024 from Tuticorin. Since then, construction has been progressing for 32 out of the 33 major facilities. On August 27, 2025, Dr. V. Narayanan, Chairman, ISRO / Secretary, Department of Space laid the foundation for the Launch Pad at the SSLV Launch Complex (SLC). The SLC consists of stage preparation & vehicle integration buildings, launch pad & rail track systems, range systems, checkout systems, telemetry & tele-command systems, safety & firefighting facilities, and general civic amenities. Major systems including the Mobile Launch Structure (MLS), bogies, platforms, doors, Jet Deflection Duct and vibration isolation systems have been designed by SDSC SHAR. Major range systems such as radars, telecommand, and telemetry are being developed in-house and being realised through industry partnerships, with support from other ISRO centres including VSSC, SAC, ISTRAC and IISU.

On this occasion, the Shri Padmakumar E.S., Director, SDSC- SHAR; Shri Rajarajan A., Director, VSSC; and Shri J. Asir Packiaraj, Director, IPRC were present, along with senior officials of ISRO and State Government Officials.

The Second Launch Complex at this site is targeted for completion by the end of 2026, enabling launches of SSLV as well as rockets from NGEs. The launch of sounding rockets for upper atmospheric studies and demonstration of technologies is targeted to commence from December 2025.







## ISPA IN NEWS

India sees S'pore as valued partner as private sector makes foray into space with GIC, Temasek funding

29 Septemebr 2025 | Straits Times

**India's IITs are Great But...** 

16 Septemebr 2025 | Analytics India

<u>Securing India's Space Future</u>
<u>Through Semiconductor</u>
<u>Sovereignty</u>

12 September 2025 | IADB

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<u>"I am Looking for an Elon Musk in India": Gen A K Bhatt, DG-ISA</u>

1 September 2025 | Youtube Shorts

Rising orbit: Startups power India's new space journey

September 2025 | Voice & Data

Union Minister Jyotiraditya Scindia hails young innovators for their contributions to Indias space sector boom

5 October 2025 | Mint

<u>Italy launches first aerospace</u> <u>business mission to India explores</u> <u>space sector tie-ups</u>

24 September 2025 | Economic Times

<u>Securing India's Space Future</u> <u>Through</u> <u>Semiconductor</u> Sovereignty

12 September 2025 | LinkedIn

**Expanded space systems to secure the high ground** 

3 September 2025 | Business Standard

<u>Can SATCOM be the game-changer</u> <u>for India's digital future?</u>

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"I am Looking for an Elon Musk in India": Gen A K Bhatt, DG-ISA

1 September 2025 | Youtube Shorts

Mayank Golechha Wins Viasat:
Space for Good India Challenge
2025 with Superconducting
Electromagnetic Rings in Space

1 October 2025 | SME street



# ISPA IN NEWS

#### AI IN SPACE

India's space journey has always been marked by innovation, resilience, and impact. As the world enters a new era of space exploration, defined by small satellites, reusable launchers, and a growing role of private players, Al is also emerging as a powerful enabler. Ali is now central to how we observe the Earth, explore distant planets, and manage our expanding presence in orbit. Its integration is helping transform space missions into faster, smarter, and more efficient endeavours, while also making them more relevant to daily life back on Earth.

At the heart of this change is data. Space is a complex, data-heavy environment. Earth observation satellites generate terabytes of imagery and sensor feeds every day, capturing everything from crop health and water body levels to forest cover, glacial retreat, and urban expansion. Without intelligent systems to interpret this information, much of its potential cannot be captured. All through machine learning and deep learning, is allowing us to process this data faster, draw sharper insights, and act in real-time.

Al's impact is already visible across key pillars of India's space activities.

- In Earth observation, Al-powered image recognition is being used to detect crop patterns, predict yield, identify mining activity, and flag deforestation. These applications are particularly useful for building climate resilience, enabling precision agriculture, and supporting long-term resource planning.
- In satellite operations, AI is improving how we manage large constellations of small satellites. It supports real-time health monitoring, bandwidth optimisation, and autonomous collision avoidance, helping keep space safe and sustainable. This is becoming increasingly important as India sees growing private participation in LEO (Low Earth Orbit) services.





Lt. Gen. Anil Kumar Bhatt (Retd.) Director General

Indian Space Association

- By combining data from satellites and ground sensors, AI helps predict floods, forest fires, cyclones, and earthquakes with improved accuracy. These insights support emergency services and safeguard lives and livelihoods across rural and urban India.
- In planetary exploration, Al plays a critical role
  in enabling autonomous navigation. With long
  communication lags between Earth and
  distant celestial bodies, spacecraft need to
  make decisions independently. During the
  Indian Space Research Organisation (ISRO's)
  Chandrayaan-3 mission, Al-supported
  onboard systems helped the Vikram lander
  analyse terrain and execute a precise soft
  landing on the Moon's south pole. Future
  missions to Mars and beyond will increasingly
  rely on such intelligent autonomy.
- Alis also becoming essential in communication and navigation systems. It is being used to enhance spectrum efficiency, manage signal quality, and ensure reliability of Satcom, and Position, Navigation, and Timing (PNT) services which are key to sectors like mobility, defence, and infrastructure.

#### Al enabling Missions in Space

The National Aeronautical & Space Administration (NASA) uses neural networks to identify exoplanets, while the European Space Agency's (ESA) Gaia mission is cataloguing over a billion stars using Al-powered photometric analysis. In this evolving landscape, India has a unique opportunity to lead through cost-effective, scalable innovation. India's space economy is projected to grow to \$44 billion by 2033, according to the decadal vision released by IN-SPace (Indian National Space Promotion and Authorisation Centre).

Al will be central to realising this vision, not only by enhancing mission efficiency but also by creating downstream value in sectors like agriculture, climate science, defence, telecom, and urban development. Equally important is India's potential to serve other developing nations in the Global South, by offering Al-enabled space solutions that are both affordable and contextually relevant.

India's Al-in-space ecosystem is growing not only through government programmes but also through a strong wave of private innovation. Startups and enterprises are using Al to build solutions that are both technically advanced and commercially viable. Pixxel is building a constellation of hyperspectral imaging satellites, using Al analytics to generate detailed insights for environmental and agricultural monitoring. SatSure is integrating geospatial Al with financial analytics to provide decision support for agritech, banking, and insurance, helping assess crop loss, deliver targeted subsidies, and optimise rural credit risk. Skyroot Aerospace and Agnikul Cosmos are applying Al in launch vehicle design and propulsion system optimisation. Al is helping these startups improve performance predictions, simulate flight paths, and accelerate the development of reliable, small satellite launch platforms.

ISRO is also leveraging Al in launch planning, Earth data analysis, and robotics. Its Bhuvan platform

integrates AI for urban mapping and infrastructure monitoring. India's collaboration with NASA on the NISAR (NASA-ISRO Synthetic Aperture Radar) satellite will generate one of the largest AI-ready datasets on Earth's land and ice surfaces, vital for studying climate change and tectonic dynamics.

With regulatory support from IN-SPACe and industry coordination through the Indian Space Association (ISPA), India's private players are now able to access satellite data, ground infrastructure, and research facilities, further fuelling innovation at the intersection of Augustanesses.

#### Convergence of Al and space in future

As we embrace AI, we must also recognise the ethical and governance challenges that come with its autonomy and scale. Training datasets, particularly those used in surveillance and resource monitoring, must be representative and free of bias. Systems that make independent decisions in orbit must be accountable and transparent. India can take a leadership role in setting frameworks for responsible AI in space including clear guidelines on data privacy, system auditability, cybersecurity, and ethical design.

For India, the convergence of AI and space holds the key to unlocking new levels of capability, autonomy, and impact. With the right investments, policies, and partnerships, India can lead the world in building a responsible, scalable, and inclusive Alpowered space future.

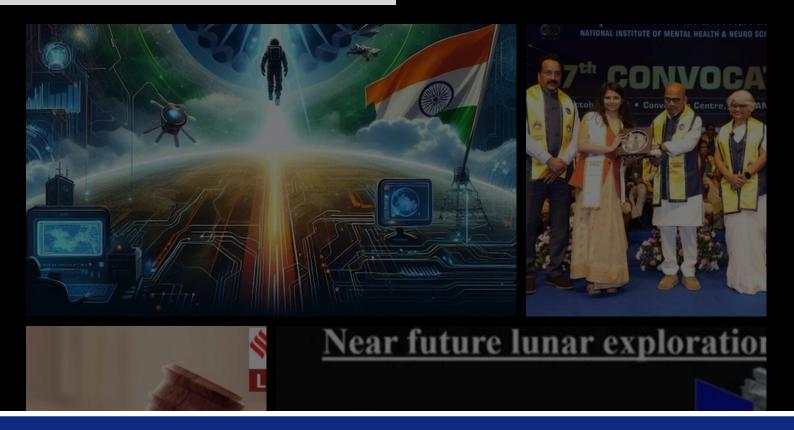


The NASA-ISRO Synthetic Aperture Radar (NISAR)

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BSNL signals upper hand over rivals in Satcom race

30 September 2025 The Economic Times

<u>Verizon in talks to buy EchoStar</u> <u>wireless spectrum, Bloomberg</u> <u>News reports</u>

30 September 2025 Rueters

<u>UK Space Agency Expands</u> <u>With 23 Global Projects</u>

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<u>US chipmaker Qualcomm sees</u> <u>satcom playing secondary role</u> <u>5G, eyes India's larger role in 6G</u>

29 September 2025 Moneycontrol

<u>China turns to car-style</u> <u>production to accelerate rocket</u> <u>and satellite manufacturing</u>

29 September 2025 First Post

<u>SpaceX Falcon 9 Deploys 28</u> <u>Next-Generation Starlink V2</u> <u>Mini Satellites</u>

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NASA Faces Uncertainty Over Space Plane Missions to ISS Before Its Deorbit

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India sees S'pore as valued partner as private sector makes foray into space with GIC, Temasek funding

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<u>Viasat in talks with Indian</u> <u>startups to build mini</u> <u>geostationary satellites</u>

28 September 2025 Business Standard

<u>India's first-ever astronomy</u> <u>observatory completes 10 years</u> ||

28 September 2025 The New Indian Express

India set for eSIM revolution in telecom technology space

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<u>Starlink's 10x higher pricing to</u> <u>limit threat to Indian telcos</u>

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<u>Satcom spectrum pricing won't</u> hit telcos: Feels DoT

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DoT signals stricter rules for satellite spectrum sharing amid interference concerns

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Scindia says telecom cybersecurity concerns resolved after industry meet

25 September 2025 Business Standard

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<u>business mission to India,</u>
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<u>SpaceX plans two launches</u> <u>from two coasts on Thursday,</u> <u>Starlink smallsat Group 7-11</u> from California

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<u>Isar Aerospace to Launch R-Space Satellites Under ESA</u> <u>Marketplace Program</u>

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ISRO, Schneider Electric to extend collaboration on India's space missions

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Amid tariff tension, India-US space partnership success gets spotlight at Houston event

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IIT Bombay-led 'Daksha' mission aims to build satellites; most powerful telescopes, deep space race

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Shaping Up Healthcare As
Much As Space Exploration:
ISRO Chairman

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India Drafting Plan To Shield
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<u>recalls Peggy Whitson's parting</u>
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Chennai's OrbitAID Opens
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India's IITs are Great But..

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Securing India's Space Future
Through Semiconductor
Sovereignty

12 September 2025 Indian Aerospace & Defence Bulletin

Satcoms' mobility services may see regulatory hurdle

17 September 2025 The Times of India

DCC to seek clarifications from TRAI on satcom spectrum recommendations

16 September 2025 The Economic Times

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EchoStar expects to have \$24 billion in cash after spectrum sales, debt payments

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Globalstar Prepares Next Era of Mobile Satellite Connectivity with HIBLEO-XL-1 Filing

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The Fast Mode

EchoStar expects to have \$24 billion in cash after spectrum sales, debt payments

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"Long-standing and fruitful": Indian envoy to US highlights decades-long space partnership

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India to launch precise timekeeping project with Isro, NPL across 5 sites

15 September 2025 Business Standard

<u>Govt keen to launch satcom</u> <u>services by December-January:</u> Sources

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<u>DoT mulling new norms: For</u> <u>satcom companies, sky may</u> <u>have a subscriber limit</u>

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<u>Indian Private Sector Key To</u>
<u>Achieve Ambitious 119 EO</u>
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15 September 2025 Orbital Today

Satcom Shields adds Walton

De-ice products to the company's portfolio

14 September 2025 Satnews

India's Space Sector Ready For Global PlayPrivate Players To Drive Growth|Dr. Pawan Goenka, IN-SPACe

13 September 2025 Business Today

Elon Musk announces Starlink breakthrough: Phones to connect directly to satellites in 2 years

11 September 2025 The Times of India

<u>Lebanon cabinet grants licence</u> to Elon Musk's Starlink 12 September 2025

September 202 ET Satcom



Eutelsat partners with Skynopy to explore opening OneWeb ground stations to Earth observation

11 September 2025 Space News

<u>Drone startups look to stay</u> <u>afloat via Namo Drone Didi</u> Scheme

11 September 2025 The Economic Times

<u>Gaganyaan: ISRO conducts</u> <u>simulation missions</u>

10 September 2025 The Indian Express

Esri India, Dhruva Space ink pact for easy access to earth images from 200 satellites

10 September 2025
The Economic Times

<u>HAL inks SSLV tech transfer</u> <u>deal with IN-SPACe</u>

10 September 2025 The Economic Times

<u>From petri dish to payload:</u> <u>India's next Big Bang in</u> future deeptech

9 September 2025 Business Standard

Samvardhana Motherson's growth play: From autos to electronics and aerospace

9 September 2025 The Mint <u>Shubhanshu Backs UP's Space</u> Tech Push At Invest UP Meet

10 September 2025 The Times of India

India achieves nine world records in space missions, more to follow: ISRO Chief

9 September 2025 DD News

400 Scientists Worked Continuously During Operation Sindoor: ISRO Chief

9 September 2025 NDTV

<u>Airbus CEO 'very committed' to combination of European space businesses</u>

9 September 2025 Space News

Bharat Forge planning a defence complex to make missiles and space launch vehicles, sending shares higher

8 September 2025 Money Control

<u>Space must empower every</u> <u>sector and serve common</u> <u>citizens: Jitendra</u>

8 September 2025 The Statesman

India projects five-fold growth in space economy to \$44 billion by 2033, bets on downstream services and exports

9 September 2025 The Economic Times <u>Secure India's space and media</u> future

9 September 2025 Financial Express

SpaceX deal: Elon Musk's firm to buy EchoStar spectrum licenses for \$17 bn: Starlink expansion to get major boost

8 September 2025 The Times of India

<u>India may open door for satcom</u> <u>firms to serve foreign markets</u>

8 September 2025 Mint

India poised to expand its share in global space economy:
Report

8 September 2025 The Hans India

<u>Satcom, getting it off the</u> ground fast

7 September 2025 The Economic Times

Skyroot Aerospace gets 300 acres for ₹400-cr rocket facility near Tirupati

7 September 2025 Hindu BusinessLine

<u>Spectrum sprint: Starlink starts</u> <u>to lay groundwork</u>

7 September 2025 ET Manufacturing



The Battle Ground In India For Satellite Internet Is Getting Ready With Eutelsat OneWeb Entry

#### 7 September 2025 Orbital Today

<u>Space</u> <u>sector</u> <u>poised</u> <u>for</u> <u>massive</u> <u>growth</u> <u>amid</u> <u>new</u> <u>policies</u> <u>and</u> <u>startup</u> <u>surge,</u> says NRSC director Praksah

#### 6 September 2025 The Times of India

Dassault Aviation gains majority control in JV with Anil Ambani's Reliance after 2% stake buy

#### 5 September 2025 The Mint

<u>Duffy vows Nasa will beat</u> <u>China to moon, says 'I'll be</u> <u>damned' if not</u>

#### 5 September 2025 Business Standard

JetBlue to enhance onboard Wi-Fi with Amazon's Kuiper network by 2027

#### 5 September 2025 ET Satcom

Rakesh Sharma recalls journey to the stars; 'space flight was never on my radar

#### 5 September 2025 The Telegraph Online

<u>Starlink receives provisional</u> <u>spectrum for Trial, ahead of a</u> <u>full-scale commercial launch</u>

#### 4 September 2025 The New Indian Express

<u>Eutelsat Group Rebrands as</u> <u>Eutelsat Following OneWeb</u> <u>Merger</u>

#### 4 September 2025 Tech Africa News

Expanded space systems to secure the high ground

#### 3 September 2025 Business Standard

Indian American Amit Kshatriya as new associate administrator of NASA, the agency's top civil service role

#### 3 September 2025 ANI

'<u>If you are not mindful...':</u>

<u>Shubhanshu Shukla</u>

<u>demonstrates how astronauts</u>

<u>eat food in space</u>

#### 3 September 2025 The Indian Express

Israel MOD and IAI Successfully
Launch Ofek 19 Satellite,
Entering its Orbit in Space

#### 3 September 2025 EDR Magazine

What Does The Indian Space Association Think Of The Draft National Telecom Policy?

#### 2 September 2025 Media Nama

<u>DoT rejects Trai plan to charge</u> <u>'paltry'</u> ₹500 urban satcom levy

#### 3 September 2025 The Economic Times

KDDI first to launch data satellite communication on au Starlink Direct

#### 1 September 2025 Telecom TV

Indian startup conducts drop test on capsule designed to bring cargo from space

#### 2 September 2025 India Today

Semicon India 2025: India unveils Vikram-32; First indigenous space-grade microprocessor to PM Modi

#### 2 September 2025 Deccan Herald

Suhora and Satellogic Deepen
Partnership with Exclusive
Agreement for High-Resolution
Earth Observation Services in
India and Nepal

#### 2 September 2025 CXO Today

<u>Singapore in talks with IN-SPACe to strengthen space</u> <u>partnership</u>

#### 1 September 2025 The Economic Times

ISRO invites proposals from scientific community to analyse Chandrayaan-3 lander, rover data

#### 1 September 2025 Deccan Herald

Symbiosis and ISRO Jointly Organize 'ISRO Exhibition 2025 from Earth to the Stars: India's Journey in Space'

#### 1 September 2025 The Tribune

Amazon Kuiper plans India debut next year, lags satellite communication peers

#### 1 September 2025 The Mint













## **USA**

- NASA has modified its ISS resupply contract with Sierra Space, which builds the robotic Dream Chaser space plane
- NASA geologist and astronaut candidate
   Lauren Edgar says stepping foot on the
   Red Planet 'would be a dream'
- Astronauts welcome NASA's new 'ascans' |
   On the International Space Station Sept.
   22-26, 2025
- <u>SpaceX launches 24 Starlink internet</u> satellites, lands rocket on ship at sea
- <u>Moon-to-Mars veteran Amit Kshatriya</u> named NASA associate administrator
- <u>SpaceX launches 11th batch of 'proliferated</u> architecture' US spy satellites (video)
- 'I'll be damned if that's the story we write':

  Acting NASA Administrator Duffy vows
  not to lose moon race to China
- <u>SpaceX moves next Starship spacecraft to</u> <u>launch pad for testing</u>
- <u>SpaceX Starlink satellite photobombs</u> orbital view of secret Chinese air base
- <u>US in real danger of losing the moon race</u> to China, experts tell Senate
- <u>U.S., UK Space Commands execute first</u> joint satellite maneuvers

- NGSO set to disrupt In-Flight Connectivity Landscape
- NASA-ISRO Satellite Sends First Radar Images of Earth's Surface
- NASA Awards Atmosphere Research Support Contract
- NASA Awards Atmosphere Research Support Contract
- NASA Selects Blue Origin to Deliver VIPER Rover to Moon's South Pole
  - NASA Sets Launch Coverage for Space Weather Missions
  - NASA Armstrong to Host Partnership
    Day Oct. 21-22
  - NASA Armstrong to Host Partnership
    Day Oct. 21-22
  - <u>Telangana scientist selected for US</u> space mission 2029
  - NASA signs US-Australia Agreement on Aeronautics, Space Cooperation
  - India-US Space Partnership Among Strongest Pillars of Bilateral Ties: India's Ambassador to the US Vinay Mohan Kwatra
  - <u>Space Development Agency</u> <u>completes successful launch of First</u> <u>Tranche 1 satellite</u>
  - Report warns China could overtake the US as top nation in space



## **CHINA**

- <u>Chinese scientists develop detergent-free</u> <u>space washing machine</u>
- <u>Chinese spacecraft image Maxar remote</u> <u>sensing and U.S. early warning satellites</u>
- How China Is Transforming Space Power
- <u>Report: China Pushes on Space Diplomacy</u>, Science, Launch
- A new report finds China's space program will soon equal that of the US
- Galactic Energy secures \$336 million, nears debut of new reusable and solid rockets
- China boosts broadband, IoT and weather satellite fleets with flurry of launches
- <u>China promotes direct-to-device satellite</u> <u>services with new guidelines and licensing</u>
- China proposes flyby mission to asteroid Apophis during 2029 Earth encounter
- China remains No. 1 threat in space: Space Force general
- Space pull system: China's industrial revolution to make rockets and satellites like cars
- <u>US satellite spies on Chinese space station</u> and more. China spies back
- <u>Deep Space, Deep Strategy: China's Cosmic</u> Calculus

- China sends experimental Shiyan-30 satellites into orbit as launch cadence intensifies
- <u>US, France step up joint military satellite</u> moves to counter China in space
- China set for high-stakes moon program and reusable launch tests to close out 2025
- <u>China's Geovis Insighter Technology to</u> launch SSA constellation
- Air Force Secretary warns of 'Sputnik moment' as U.S. faces China's rapid military advances
- <u>Launch startup iSpace secures fresh</u> <u>funding as hot fire tests heat up China's</u> reusable rocket race
- <u>China completes second hot-fire test for</u> <u>new moon rocket, including engine</u> <u>restarts</u>
- <u>China launches mystery Yaogan-45</u>
   <u>spysat, expands Geesatcom</u>
   constellation
- The race back to the moon: What if China lands its astronauts first?
- China shows off advanced hypersonic missiles, ICBMs and drones in military parade (photos)
- <u>China's space, aviation, maritime</u> achievements on show in Macao



## OTHER NATIONS

- <u>Israel spy satellite launch sparks 'brief</u> <u>panic' as residents mistake rocket for</u> <u>missile: reports</u>
- <u>Ukraine destroys giant radio telescope</u> <u>used by Russian military</u>
- <u>European Space Agency's Euclid space</u>
   <u>telescope maps 3.4 billion galaxies;</u>
   <u>world's most extensive simulation of the</u>
   universe
- SpaceX launches powerful satellite to orbit for Indonesian telecom company
- Russian 'Noah's Ark' satellite carrying 75 mice and 1,500 flies lands back on Earth
- <u>Europe wants to launch a life-hunting</u> <u>mission to Saturn's icy ocean moon</u> Enceladus
- Russian Progress spacecraft arrives at the ISS with 2.8 tons of cargo
- <u>Sept. 28, 1962: Canada launches its 1st satellite</u>
- <u>'We've known it's been coming for a while'</u>: Inside the decision to eliminate the UK Space Agency
- The US military just moved a satellite to inspect a UK spacecraft 22,000 miles above Earth
- <u>Space Tech Expo Europe: 18-20</u> <u>November 2025, Breman, Germany</u>

- <u>Unknown cylinder marked with Israel</u> <u>Space Agency logo spotted in Italian waters</u>
- From Startup Nation to Space Nation: Inside Israel's Booming Satellite Industry
- <u>Israel Launches Ofek 19 Surveillance</u> <u>Satellite With SAR Capability</u>
- <u>Israel and Hungary Sign Landmark Space</u> <u>Cooperation Agreement</u>
- <u>Iran vows to launch four satellites, open</u> new spaceport by March
- <u>Iran unveils multiple satellite launch plans</u> amid push for space self-reliance
- <u>Iran likely carried out undeclared missile</u> test, satellite photos analyzed by AP show
- Iran poised for landmark year in space with Kowsar, Zafar, and Paya satellite launches
- <u>European Space Agency warns against</u> <u>monopolies as satellite merger looms</u>
- Chile a hotspot for telescopes peering up into deep space to study stars, black holes, dark matter and galaxies.
- <u>It came from outer space: Scientists</u> <u>solve decades-long mystery of the</u> <u>Silverpit Crater: Scotland scientists</u>
- <u>Munich Space Summit was announced:</u> 23-27 March 2026



### OTHER NATIONS

- <u>South Korea Should Build Out a</u> Reconnaissance Satellite Ecosystem
- <u>South Korea aims to build space station</u> <u>module in 5 years</u>
- KASA raises 2026 budget to 1.11 tln won to boost satellite, lunar projects
- <u>LG showcases advancements in space</u> <u>technology during annual startup demo</u> day
- <u>John Lee resigns as head of Korea space</u> <u>agency mission headquarters</u>
- <u>Korea, France reach agreement on defense space cooperation</u>
- <u>South Korea develops 35-ton methane</u> <u>engine for reusable space launch vehicle</u>
- <u>Taiwan to launch US\$180M investment</u> in domestic rocket program
- <u>Australia urged to join European Space</u>
   Agency to fast-track industry growth
- Australia and Spain join global effort to tackle space debris
- <u>Poland and Australia partner to track</u>
   <u>space junk</u>
- <u>Australia's Final Frontier: Inside the</u>
   <u>Rapid Rise of its Space & Satellite Industry</u>

- All systems go as private sector helps UAE's space economy grow to Dh22 bn
- <u>UAE space leadership: Driving Middle</u>
   <u>East's \$18 billion space market</u>
- <u>UAE</u> <u>delegation</u> <u>explores</u> <u>space</u> <u>collaboration in Japan</u>
- KFSHRC and Saudi Space Agency sign MoU to advance space medicine
- <u>UK Space Agency Funds Innovative</u>
   <u>Projects Using Satellite Tech to Tackle</u>
   <u>Climate and Transport Challenges</u>
- Pakistan's space agency to unveil 'Sky Clinic' telemedicine solution at Karachi Expo
- Building Saudi Arabia's space champion
- Inside ESA's vision with Josef Aschbacher



## GOVERNMENT POLICIES/ CONSULTATIONS/ RECOMMENDATIONS/ ANNOUNCEMENTS

<u>Joint Military Space Doctrine</u>, announced by the CDS during the Indian DefSpace Symposium 2025 (organised by ISpA in April 25), has now been officially released.

The Joint Military Space Doctrine, announced by the CDS during the Indian DefSpace Symposium 2025 (organised by ISpA in April 25), has now been officially released. We extend our heartfelt congratulations to Gen Anil Chauhan, CDS, the three Service Chiefs and the Defence Space Agency on this landmark development. This doctrine marks a transformative step in:

- Strengthening India's strategic capabilities
- Fostering jointness across the Services
- Reinforcing India's leadership in the space domain

The doctrine was released during Combined Commanders Conference 2025 <u>#CCC2025</u> in Kolkata which has a theme- "Year of Reforms – Transforming for the Future".



# ISpA UPCOMING EVENTS

#### **INDIA INTERNATIONAL SPACE CONCLAVE (IISC 2025)**

The 4th edition of ISpA's annual flagship event the India International Space Conclave (IISC 2025), will be held from 18th to 19th November 2025, at The Lalit, New Delhi. This year, we are exploring themes under "Expanding Horizons: Innovation, Inclusion & Resilience in the New Space Age".

Registrations Now Open!

Join global leaders, innovators, policymakers, and industry trailblazers as we shape the future of space! 

Register now and be part of India's premier space industry gathering. For more information and registration, visit <a href="https://www.ispaevents.space">www.ispaevents.space</a>.







#### **Founding Members**

- Alpha Design Technologies
- Bharti Airtel
- CE Info Systems (Map my India)
- Eutelsat OneWeb
- Larsen & Toubro
- Nelco (A TATA Enterprise)
- Walchandnagar Industries

#### **Associate Members**

- Avantel
- Axon Interconnectors & Wires
- BAE Systems India
- BEML
- Bharat Electronics
- Broadcast Engineering Consultant India
- Capella Space
- ESRI India
- HAL Aerospace Division
- ICEYE
- INMARSAT India
- LeoLabs
- MAXAR Technologies India
- Nibe Space
- Northstar Earth & Space
- Planet Labs
- SES India
- Tata Advanced Systems
- Tata Consultancy Services

#### **Core Members**

- Ananth Technologies
- Astra Microwave Products
- Azista Industries
- Bharat Forge
- Centum Electronics
- Godrej & Boyce Manufacturing
- Hughes Communications India
- Ipstar (India)

#### **Start-up Members**

- Agnikul Cosmos
- AIDIN Technologies
- Altz Tchnologies
- Anvikshiki sarvajna
- Astrogate Labs
- Astrome Technologies
- Augsense Labs
- Bellatrix Aerospace
- BES Space
- BosonQ PSI Tech
- Caliche
- C14
- Computational Imaging Tech (CI-Metrics)
- CYRAN AI Solutions
- Dhruva Space
- Digantara
- Elena Geo Systems
- GalaxEye
- Geo Solutions India
- Hyspace Technologies (SkyServe)
- Indian Technology Congress Association
- Inspecity Space Laboratories
- KaleidEO Space Systems
- Kawa Space
- Kepler Aerospace

- Kerala Spacepark
- Maan Defence
- Manastu Space
- Micronet Solutions
- Omspace Rocket & Exploration
- OnEarth Space TS
- Omnipresent Robot
  Tech
- OrbitAID Aerospace
- Piersight Space
- Pixxel
- Robinsons Cargo & Logistics
- Saankhya Labs
- Samkalpa Systems
- SatLeo Labs
- SISIR Radar
- Skymap Global India
- Skyroot Aerospace
- Space Machines Co.
- SpaceFields
- Suhora Technologies
- Upgraha Space
- Vihaan SpaceTechXovian Aerospace





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