

With this edition of UPDATE, ITCA hopes to keep you apprised of the latest happenings in the 75 Student Satellites Mission. The Mission is to bring Academia closer to NewSpace and build the capacity amongst today's students-tomorrow's workforce to position India as the worldwide centre for space technology. ITCA's Engineering Prowess and Industriousness in developing and deploying CubeSats are chronicled in the journey to accomplish the Mission of student-built satellites.

Upcoming...

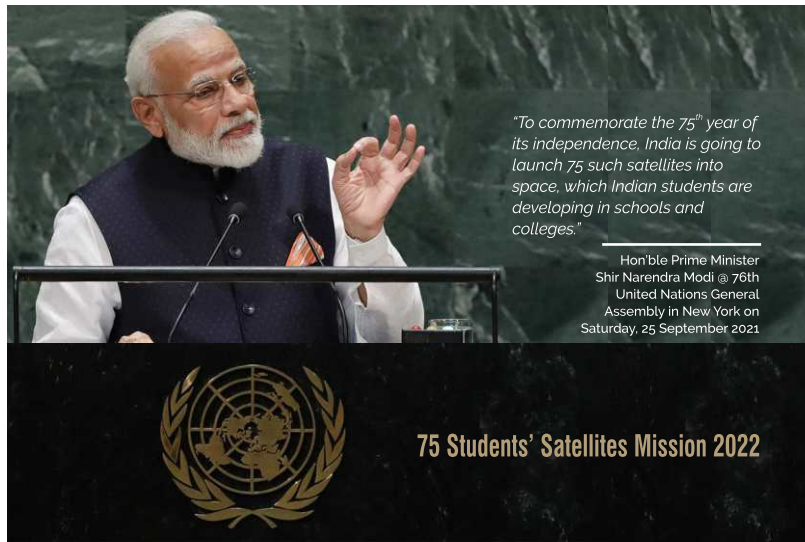
As part of their efforts to broaden the global reach of the 75 Student Satellite Mission, core teams from the ITCA will be participating at the International Astronautical Congress (IAC) in Paris, France which will be held from 18-22 September 2022.

The 25 to 27 September 2022 will be the dates when Novi Sad, Serbia will play host to the World CanSat/ Rocket Championship Finals. There will be a total of four teams representing the 75 Student Satellite Consortium, India. ITCA will be present at the event, which will be hosted by the Committee for the Development of the Space Programme (CSPD).

It is foreseen that there will be over 2,00,000 school students who will sign up to participate in the '75 Sats Quiz, Essay and Painting Competition' that is being organised by ITCA-KSTePS-KSCST. This number was derived from the number of students who have already expressed interest in taking part in the competition. The purpose of the competition is to raise younger people's consciousness of the Mission.

At Hindustan University, Chennai India, on 30 September 2022, the dedicated VHF/UHF Ground Control Station will be inaugurated. HU is designing and developing KCG VERGHESE Sat.

The incorporation of Gujarat Technological University (GTU) and Gujarat University (GU) into the Mission on 17 September 2022, is a step forward and represents positive momentum toward the mission's goals. In the first week of October 2022, there will be a series of meetings held to formulate an all-encompassing plan for carrying out the mission.



ITCA is making a significant effort to ensure that New-Space opportunities are leveraged to the fullest possible extent through the 75 Student's Satellite Mission by training and developing students who are prepared to address these possibilities. Instruction in the classroom, practical experience, and importantly, the actual construction of CubeSats all contribute to this learning and education.

The significance of these efforts lies in the fact that they are congruent with the goal of the New Education Policy, which aims to reform India's educational system and foster STEM ethos.

In the past few months, the 75 Sats Mission has been able to make tremendous headway as a result of the cooperation it has received from a large number of public & private space agencies and Academia. The ISRO, NSIL, and the IN-SPACe have all made great contributions toward overcoming the headwinds that this mega constellation CubeSat project was experiencing.

In addition, substantial progress has been made in the involvement of industry in the production of a complement of subsystems and the elimination of concerns associated with satellite integration. Students from across India have the exciting opportunity to participate in this one-of-a-kind mission through a variety of institutions that are partnering with the mission. During their time with the mission, they will collaborate with one another and share ideas that are multifaceted and transformative.

Contact:

Dr K Gopalakrishnan
Project Director,
75 Students' Satellites Mission
+91 99860 77247
+91 98451 73730
secretarygeneral@itca.org.in

Er Srinivas Durvasula
Program Manager, ITCA
+91 99860 77247
srinivas.durvasula@itca.org.in

Er S Shanmugam
Manager, ITCA
+91 80 4850 8380
shanmugam@itca.org.in

Secretariat

Indian Technology Congress Association
#3, First Main, BDA Layout, Kodihalli,
HAL 2nd Stage, Bengaluru - 560 008.
Tele-Fax: +91 80 4850 8380
president@itca.org.in
www.itca.org.in; www.75satellites.org



75 Students' Satellites Mission

ITCA's Engineering Prowess and Ingenuity



ITCA is a platform that connects bright minds, entrepreneurs, and innovators to foster ideas, concepts and builds NewSpace solutions through the 75 Students' Satellites Mission. We are aligning India's academia to the cutting edge of space technological innovations by designing, developing and launching student-built satellites as part of the mission.

Mission Overview

The 75 Students' Satellites Mission will commemorate India's 75th anniversary of independence, Azadi Ka Amrit Mahotsav. The Mission is a collaborative effort between ITCA and a wide range of educational institutions, including schools, engineering colleges, and universities, in which students will design, build, integrate, test, and launch their 1U CubeSats. To make progress toward the ambitious mission, ITCA has collaborated with national space agencies ISRO, NSIL, IN-SPACe, and space-related enterprises including MSMEs and Start-ups. This one-of-a-kind national project would involve the orbital launch of 75 satellites developed and built by students under the close guidance and monitoring of ITCA.

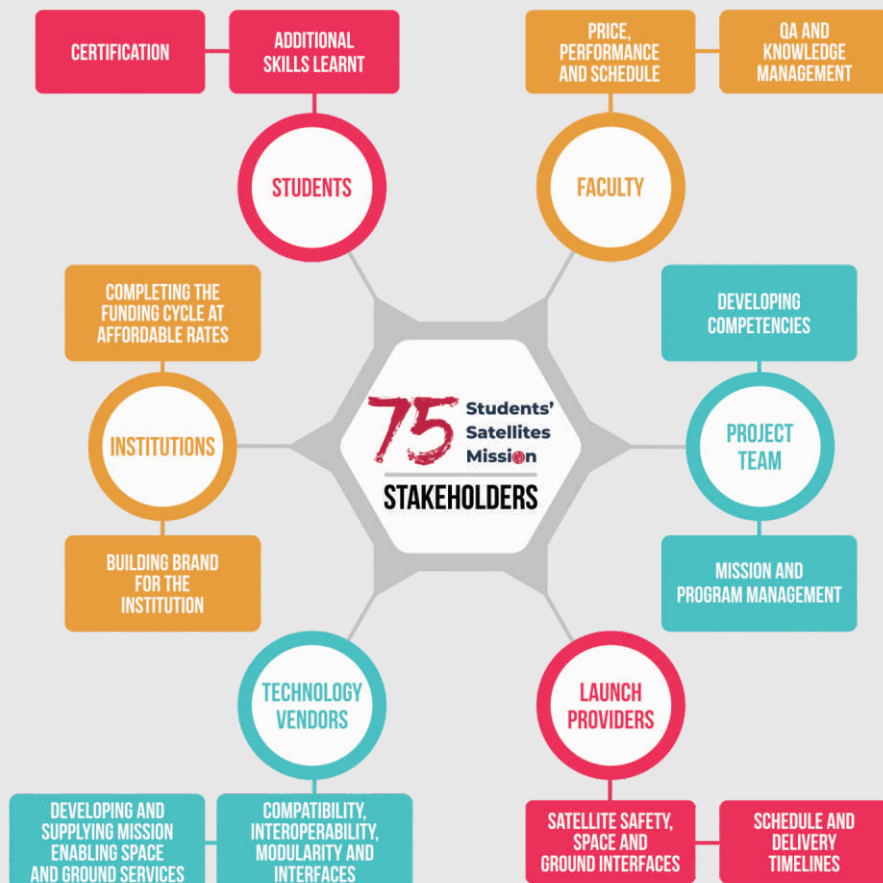
The Satellite Technology Centre has been established in the ITCA secretariat building to strengthen mission objectives and meet the needs of consortium members in expanding the mission across the nation. Through the collaborations with educational establishments, ITCA has been successful in igniting enthusiasm among students and faculty members for emerging space opportunities and student-built satellite ecosystems.

Value Addition through Mission

Today's society is far more reliant on space assets for daily necessities, resources, and economic prosperity. In the coming years, the ongoing space missions and future scientific research will be critical for gaining a deeper understanding of our planet Earth, combating climate change, and promoting global socioeconomic development. When these elements come together, the traditional space is transformed into NewSpace with numerous openings and possibilities, demanding new resources and a large, trained workforce.

With its unrivalled entrepreneurial focus and favourable private investments, the current dominant space economy provides brisk prospects and future opportunities for students and professionals excited by these pursuits.

Aside from a plethora of employment opportunities in the burgeoning space sector, the multidisciplinary learning framework, transnational technology culture, and entrepreneurial spirit are significant spin-offs/outcomes. In addition, the universities and institutions will spawn start-ups through collaborative incubation with the involvement of industry and R&D institutes.



Engineer Your Satellite – Capacity Building Training Programmes

Engineer Your Satellite (EYS) is a series of comprehensive training suites developed by ITCA to boost capacity and broaden the learning canvas of participating students. International specialists have crafted the curriculum to provide theory, hands-on practice, and real-time exposure. Under the supervision of internationally acknowledged experts in space technologies, participating students will be exposed to the state-of-the-art concepts in small satellite development, both within the country and in global locations, during the EYS programme/s in the Institution. 6 Months structured (24 Credits) Course will benefit all Space enthusiasts/Participants.

The EYS programme aims to create groups of acclaimed student leaders in STEM disciplines with a proven track-record of demonstrable experience in multidisciplinary approach of problem solving, backed by industry-recognized systems engineering framework.

An Expanding Landscape of Synergy and Cooperation



Dr K Gopalakrishnan, Secretary General, ITCA signed and exchanged an MoU with Dr P K Jain, Director-PMA, IN-SPACe in the presence of the Hon'ble Prime Minister Shri Narendra Modi Ji



ITCA Leadership Tem with Her Excellency Lt Governor of Puducherry Dr (Smt) Tamilzai Soundararajan



ITCA Leadership Tem with His Excellency Governor of Karnataka Shri Thawar Chand Gehlot



Gujarat Technological University



Gujarat University



Marwadi University, Rajkot



M.S. Ramaiah University of Applied Sciences, Bangalore



South Point High School, Kolkata



Seshadripuram Educational Trust, Bangalore

7th Bengaluru Space Expo (BSX) 2022

5-7 September 2022, BIEC, Bengaluru



ITCA Consortium showcased the range of space-tech capabilities in:

- Design of CubeSats in partnership with Academia
- GNSS New Product Development including Simulators and ADS-B Solutions
- Design, Development and Manufacture of Ground Stations
- Fabrication and Realization of Student-built CubeSats
- Training and Human-in-Space Flight Simulation Solutions

The seventh edition of the Bengaluru Space Expo 2022 (BSX) was successful in showcasing the products of 145 private and public sector companies in the space sector. Several Memorandum of Understandings (MoU) have been signed at the BSX, organised in association with the Indian Space Research Organisation (ISRO), the Indian National Space Promotion and Authorisation Centre (IN-SPACE) and NewSpace India Limited (NSIL). In the context of India opening up the space sector to private entities, the expo has been the meeting ground for private players to network and explore partnership opportunities with organizations from the public sector and abroad.

The Hindustan Aeronautics-L&T consortium signed an agreement with NSIL to manufacture five Polar Satellite Launch Vehicles. The first rocket is to be ready within 24 months, with the rest delivered six months after that. Following the successful demonstration of the initial orders, NSIL is likely to order of 14-15 rockets from the consortium.

The expo had a stall by the Indian Technology Congress Association to highlight student-built CubeSat development activities being progressed in partnership with academia including schools, engineering institutions, and universities.



Space Machines Company and Ananth Technologies will collaborate on product integration, testing, technology development and joint space missions. SABRN Health and DCube will work together on the development and integration of hardware, sensor technology and software to provide health support to astronauts. Australian start-up HEX20 will join forces with Skyroot Aerospace

to provide launch services, spacecraft avionics and components to Australian space initiatives. QL Space and Skyroot Aerospace will further develop Australian launch facilities as well as support joint space mineral exploration missions. QL Space and GalaxEye will develop a hybrid optic and radar payload together to reduce the environmental impact of critical mineral exploration. QL Space and SatSure will

cooperate to build satellite and AI-based solutions supporting agriculture, mining and defence industries.

Other start-ups, like Dhruva Space Pvt Ltd have showcased small satellite systems that are currently under development and authorized by ISRO and other government agencies including IN-SPACE.





WORLD CANSAT/ROCKETRY CHAMPIONSHIP (WCRG) WORLD FINALS

25 -27 September 2022
Novi Sad, Serbia

- Entries from 62 Countries
- 15 Countries are Qualified
- 4 Teams from India are competing
- Large Delegation from India participating



ITCA's Indo-Serbia Co-operation
Space Association of Southeast Europe (SESA)
Indo-SESA Satellite

www.wcrg.world



UNITYSat Team with 16 members' from India participated in International CanSat/Rocketry Championship 2019 held at Serbia and Won 1st & 2nd Place



04 April 2022 at Nagarjuna Vidyaniketan, Yelachenahalli at 11:30 AM CanSat (Satellite built in 350 ml volume of soft drink 'can'), has been launched by Drones with Parachute Telemetry Data Received Successfully and also stored in On Board Computer of CanSat as well!

04 April 2022 at NCET Campus, Devanahalli at 03:30 PM CanSat (Satellite built in 350 ml volume of soft drink 'can'), has been launched by Drones with Parachute Telemetry Data Received Successfully and also stored in On Board Computer of CanSat as well!

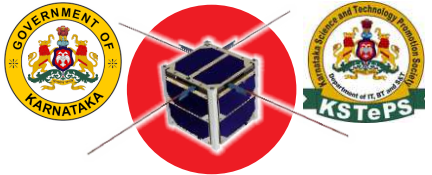
PUNEETH SATELLITE
INDIA'S FIRST
Government School
Students Satellite
by Govt. of Karnataka



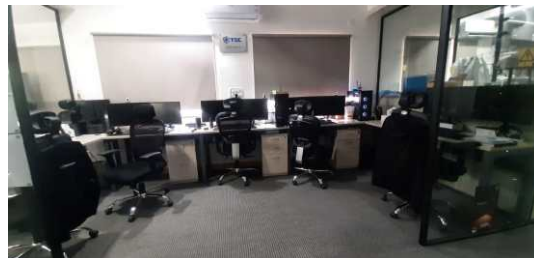
As a part of 75 Students' Satellites Mission initiated by ITCA to Celebrate India's Freedom 75 Years as endorsed and highlighted by our Hon'ble Prime Minister of India Shri. Narendra Modi at UN General Assembly on 26 Sept 2021 among World Leaders, Our Hon'ble Minister for Higher Education, S&T, IT-BT, Skill Development Dr. C.N. Ashwath Narayan, Government of Karnataka, KSTePS has announced Karnataka Government School Students Satellite (KGS3Sat)! It was then named as "Puneeth Satellite" on National Science Day held at 18th Cross Malleshwaram Government School premises! ITCA-KSTePS-KSCST has initiated State Level Space Tech Competitions under various categories across Karnataka covering all High Schools and PU Colleges in such a way to create awareness about space science and technology and also to sensitize the students about "New Space Era" or "Space 2.0" which offers future career opportunities and prospects on near future.



Historical Response to Puneeth Satellite - Karnataka State Level Space Tech Competitions for Schools' and PU Colleges' Participation through Registration is now touching 1.7 Lakhs of Students! It is expected to reach 2.0 Lakhs+ by the end of closing date (20 Sept 2022). The event has been organized by 75 Satellites Mission of ITCA-KSTePS- KSCST-Govt of Karnataka to sensitize younger generations of students to strengthen STEM Education! It is a timely intervention by ITCA and GOK!

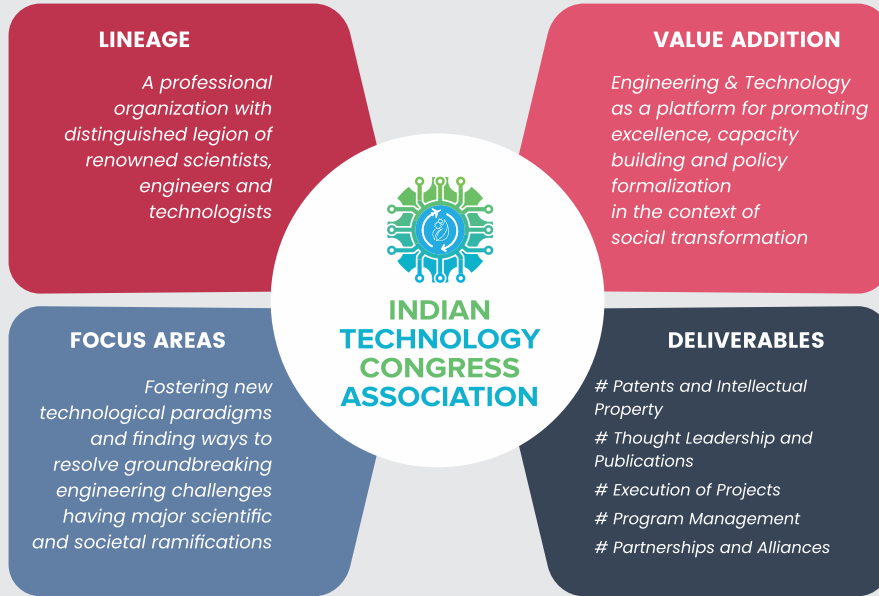


ITCA's
75 Satellite Technology Center



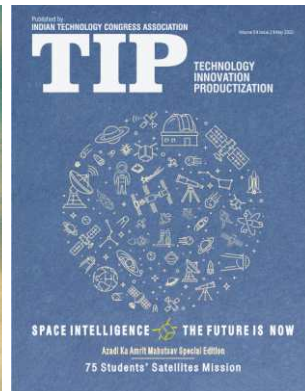
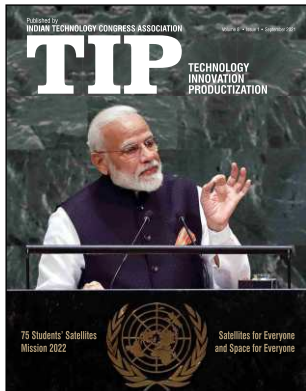


ITCA has emerged as a prominent professional organization in the nation for technological competence with significant global reach. Since its foundation, ITCA has enjoyed the unique distinction of influencing large numbers of technology professionals. Individual projects with State Governments for CubeSat development are transforming more than one hundred thousand budding students. ITCA, over the last five years is focused on equipping students with contemporary scientific and engineering abilities to participate in the burgeoning space sector, and adapt to recent scientific, economic, and social changes.



We welcome the brightest students from across the globe and are committed to preparing them to be responsible future leaders who will drive the growth of our society while also contributing to technical innovation in New-Space. The 75 Students' Satellites Mission is one of the feathers in ITCA's crown, with its focus on creating capacity amongst the future workforce to address the needs of the global space arena.

Located in the vibrant city of Bengaluru, the focus of the Indian space industry and the hub of a contributing aerospace higher education and research, ITCA is committed to driving innovation and building capacity for realizing the vision of expanding "Space-for-Earth" economy.



<https://75satellites.org/downloads>

Supported Agencies/ Countries

