LOCAL CHAPTER ACTIVITY REPORT 2025

UNISEC-NEPAL






Ashlesha Dangal

UNISEC - Nepal

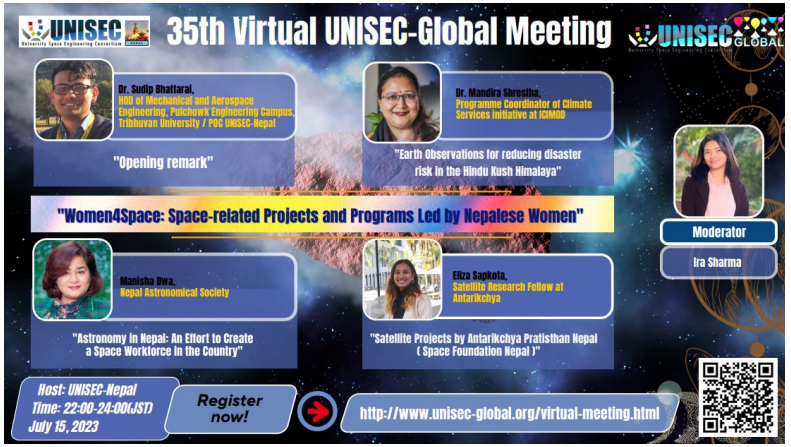
History of Local Chapter Activities

Established in *2020*

- *Participated in CLTP in 2016, 2022, 2023, 2024*
- *Won the students prize in MIC8 in 2023*
- *Held CanSat/HEPTA-Sat Trainings at:*
  - *Kathmandu University (KU) in 2016,*
  - *Pulchowk College in 2017*
  - *Brihaspati School*

- *CanSat Competitions organized by Kathmandu University (KU) Robotics Club in 2019:*
- *KU Trainees also took up developing a CanSat as their 3rd year major project - externally funded - 2017*
- *CubeSat projects organized and conducted through KU ROBOTICS CLUB in 2019*

- *Hosted UNISEC-Global Meeting in 2022, 2023 and 2024*
- *Regular involvement in UNISEC-Global Meetings*



- *Development of SASTO Cube (REPLICA OF NEPALI SAT-1) and later E-Cube Learning Kit in reference to HEPTASat for educational and exposure purposes*
- *Previous and ongoing national Satellite Projects Of Nepal include:*
  - *Nepali Sat-1*
  - *MUNAL*
  - *DANFE*
  - *PHI-1*
  - *Slippers2Sat*

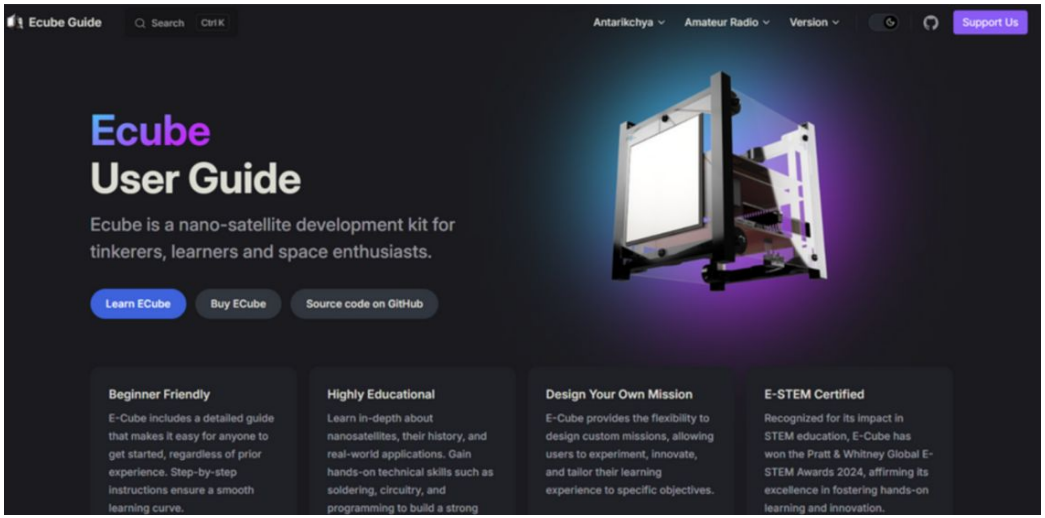
UNISEC-Nepal Activities in 2024-2025

- 5 Member Universities:
  - Kathmandu University
  - Institute Of Engineering - Pulchowk College, Tribhuvan University
  - Khwopa Engineering College, Purbanchal University
  - Kathford International College
  - ACME College of engineering, Purbanchal University

UNISEC-Nepal Activities in 2025

Successful Kickstarter campaign of E-Cube (Inspired by Hepta-Sat)

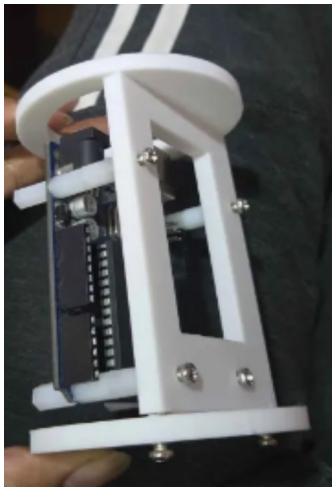
- *Aim for 2025 was to scale the production of the E-cube (Educational Cube) set*
- *Listed the upgraded, optimized and expanded E-Cube Set on kickstarter getting o**ver 150 E-cubes sold worldwide** (Shipping partner: FedEx)*
- *The kit contains OBC Board, EPS Board, Payload Board, Structure, Solar Panel, Wires, Screws, Acrylic Board, Deployment Switch, Battery, Battery Cap and Spacer*
- *A supporting webportal has also been designed for the E-cube kit*
- ***End of kickstarter journey of E-cube with plan to expand on Tindie***

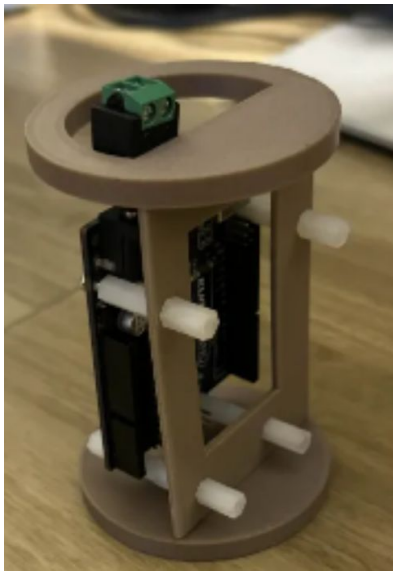


UNISEC-Nepal Activities in 2025

CanSat shield for kickstarter

- *Designing started*
- *Troubleshooting ongoing*
- *Will follow its predecessor (E-Cube)‘s footsteps with kickstarter and tindie*
- *Will be used for STEM and satellite training for undergraduates*
- ***Plan for 2026 is to successfully launch and reach Kickstarters goal for CanSat***



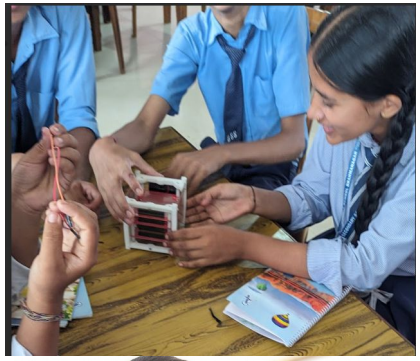


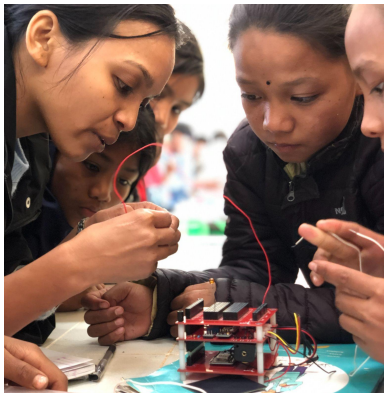
UNISEC-Nepal Activities in 2025

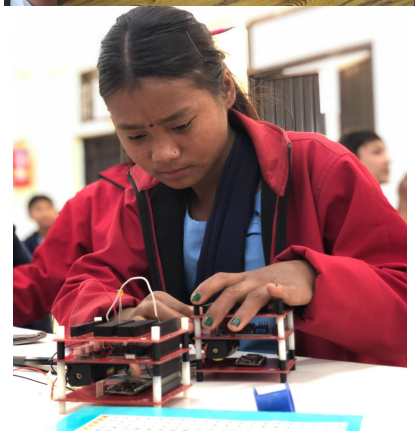
Satellite Training/ E-cube Bootcamps

- *Reached over 950 students from middle school to undergraduates level through satellite trainings*
- *Trainings included satellite training, E-cube trainings, and Cansat Training*
- *Focus is on narrowing the gender gap and promoting higher female participation*
- *more than 43% participants were girls*
- *Trainers were previously mentored University students from Purvanchal university*





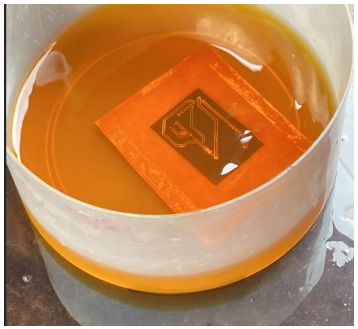




UNISEC-Nepal Activities in 2025

PCB designing training at Khowpa and Kathmandu University

- *UNISEC-Nepal helped facilitate PCB designing training at Khowpa and Kathmandu University*
- *The university students were mentored on building a PCB from scratch*
- *3 day program*
- *100+ student participants*
- *participated students were then selected to provide GS training across 7 provinces in Nepal.*



UNISEC-Nepal Activities in 2025

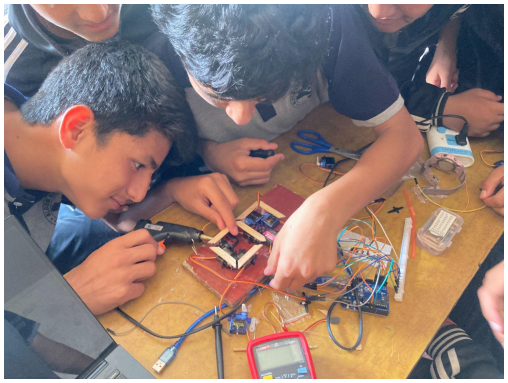
Ground station establishment and training

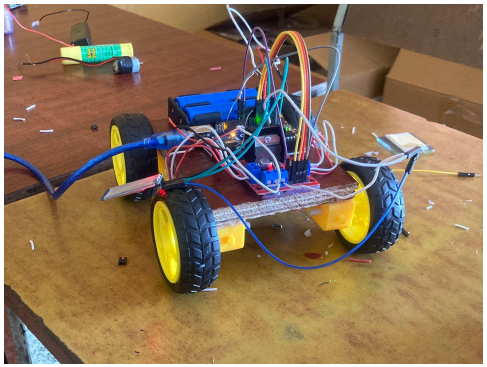
- *UNISEC Nepal with partner universities has started a program to establish a ground station in every province of Nepal*
- *The first ground station has been successfully developed in SSL, Chitwan along with training of personnel to operate the GS*
- *Providing students with antenna research opportunities, first hand satellite communications trainings, antenna building trainings and ham radio trainings*

UNISEC-Nepal Activities in 2025

Middle-school Robotics Exploration Laboratory Updates

- *UNISEC Nepal continued its support to Robotics lob at Bloom Nepal School and Budhanilkantha School*
- *Helped them receive funding, and resources from Karkhana*
- *Focus is on developing research culture among students early, satellite education, can-sat trainings, organizing robotics projects, competitions, and bootcamps*
- *Target is middle-high school students and UNISEC-Nepal plans to expand it to various other schools across Nepal as well*





UNISEC-Nepal Activities in 2025

KiboCUBE HEPTA-Sat Workshop in Sydney, 2025

Attended by Ira Sharma, she was also the moderator of the 35th Virtual UNISEC-Global Meeting hosted by UNISEC-Nepal

UNISEC-Nepal Activities in 2025

Internship Opportunities

- *UNISEC Nepal has helped link University students with space companies of Nepal for internship opportunities*

- *Students from Kathmandu University, Khowpa Engineering College of Purbanchal University, and Pulchowk Engineering college of Tribhuwan University (about 15) got internship in space companies through UNISEC Nepal this year.*

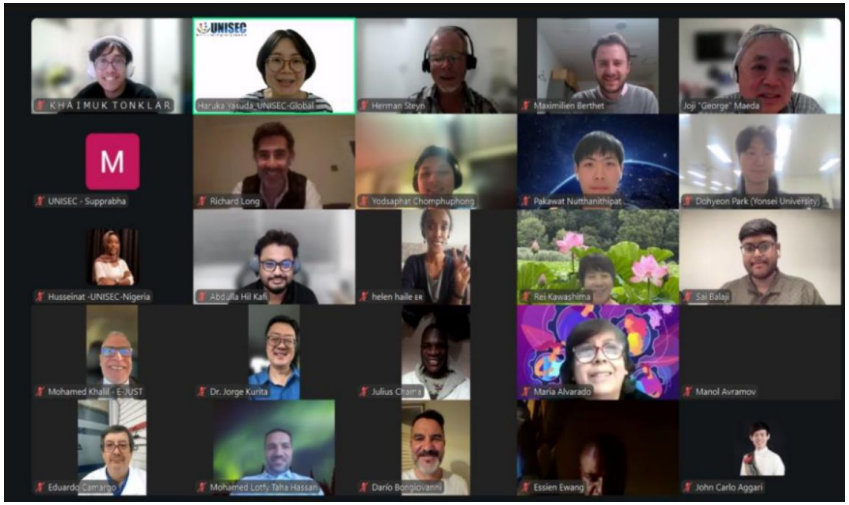
Slippers to Satellite-2

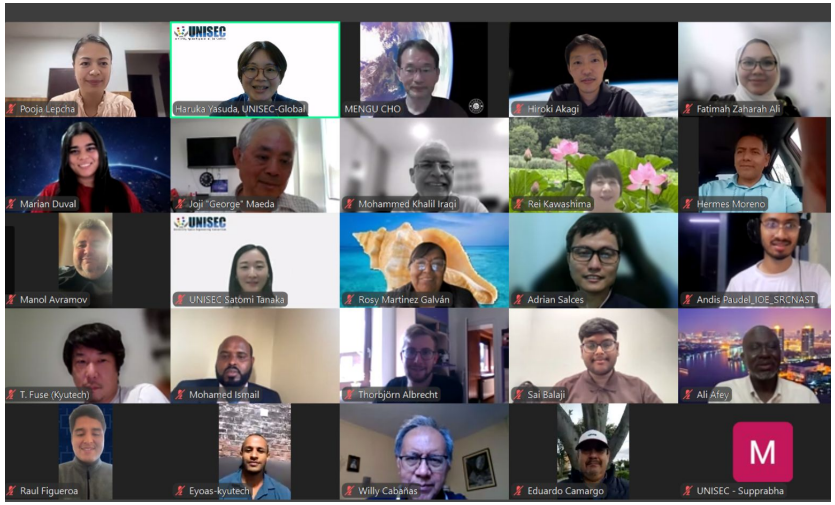
- *Development of S2S-2 will be supported by UNISEC-Nepal in 2026*
- *Students from all partner universities will get to review and collaborate with S2S-2 mentors and learn with the core-team of middle schoolers*
- *To design a 1U cube Satellite inspired by Slippers2Sat*
- *Bootcamp and training session for S2S-2 are underway*

UNISEC-Nepal Activities in 2025

Regular participation in the Virtual UNISEC-Global Meeting

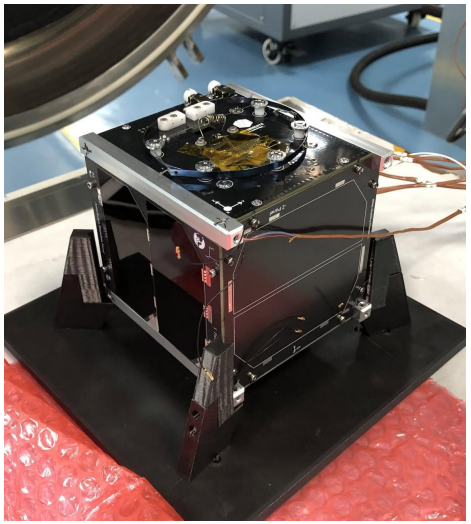
- *UNISEC-Nepal has showed regular participation in all of the UNISEC-Global Virtual Meetings*
- *UNISEC-Nepal also hosted the 35th UNISEC-Global Virtual Meeting*
- *Has been a great opportunity to connect, network and learn from other local chapters*
- *Grateful to UNISEC-Global Team*





Space Activities of Nepal in 2025

Ongoing Space Projects



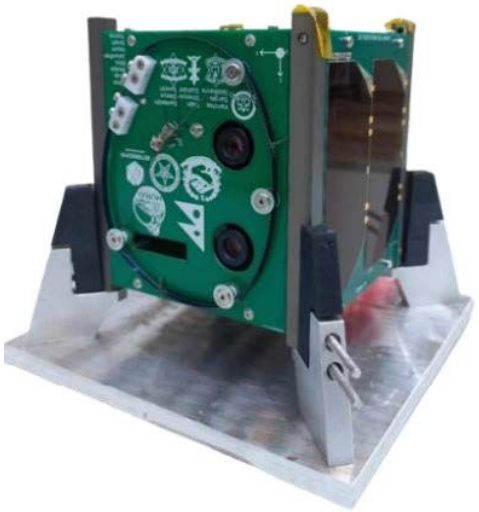
1. ***Slippers 2 Sat : Journey from Slippers to Satellite*** *- A multi-year satellite project involving middle school children of marginalized Chepang Community of Nepal*
   FM integration, testing(Sine and Random Vibration Testing and TVAC testing) and Launch of satellite via Kinetica-1 all completed in Dec 10, 2025

   Major Highlights of S2S
   - *First middle-school satellite project of Nepal*
   - *9 middle school students from marginalized communities of Nepal, a step towards social empowerment*
     - *9 students and 6 professional satellite engineers mentors, 1:1.5 mentor to mentee ratio*
     - *Exposure at such a young age will help them build a successful professional career, long term space human resource of Nepal*
     - *Provides 3 years scholarship to students and will provide them life-long networking support with National and International Partners*

Other Space Activities in Nepal

1. ***MUNAL High School Satellite***

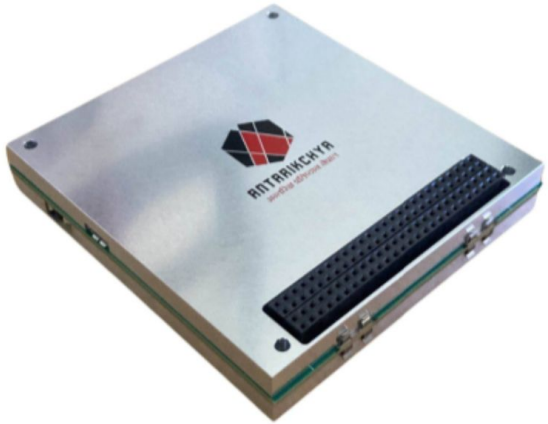
   Nepal's first high-school satellite. development has finished. waiting for launch. expected to launch in Q1 of 2026.



2. ***PHI Project***

   Payload hosting initiative by UNOOSA

   Nepal is building a payload for a 12U CubeSat has been launched successfully on the 30th of November, 2025.



MAJOR CHALLENGES FACED in 2025:

i. ***Funding***

- lack of enough funding to support our initiatives
- funding required in manufacturing kits / sustaining workplace

ii. ***Developing and Manufacturing training kits and materials***

- lack of manufacturing units in Nepal
- we design and print structure through 3D printing
- print our designed pcbs through manufacturers outside of Nepal
- have to rely on international manufacturers or Nepalese dealer/suppliers company

iii. ***Lack of primary technological education in rural areas***

- Students did not understand primary technical words
- Resulted in Communication problem
- Translation from English to Pure nepali terms was an issue

iv. ***Logistics : Transportation Safety***

- Extreme geographical complexity of Nepal continues to make it difficult to conduct decentralized Local chapter activities

Plan for 2026 and beyond

Support the Launch of one major nano-satellites of Nepal - MUNAL

Continue providing Nationwide Satellite trainings

With developed communications and Ground Station training bootcamps/ curriculum, we now aim to provide antenna and GS trainings to university students all across Nepal

Proposals for establishing other potential space research laboratories/ Antenna Laboratories/ Space system development laboratories

Increase number of partner universities to carry out our local chapter activities

Continue Supporting ongoing Space Activities of Nepal

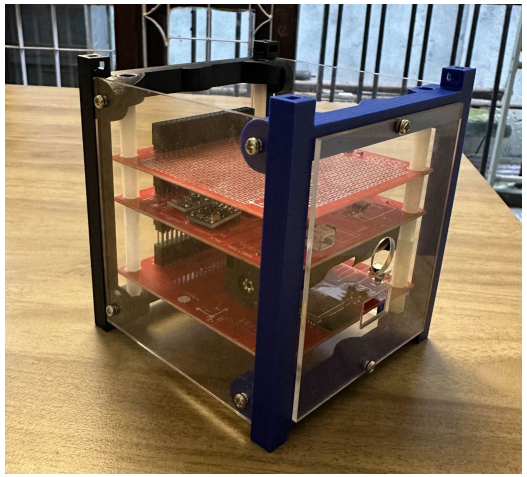
Plan for 2026 and beyond

E-Cube and CanSat Plans:

Continue Research and Development of E-cube to make the experience more immersive, educational and convenient

Keep pushing in affordability and sustainability

Partner with more universities to increase the decentralized reach and impact of E-Cube and Cansats.



Conclusions

Amidst the challenges, UNISEC-Nepal's collaboration with other national and international organizations are going smooth

Still, as an emerging country in the space industry, the lack of funding/support and lack of manufacturing units in the nation has been a major issue.

With the support of our international and national partners, we are currently not only working on major satellite projects but are also widely involved in outreach activities to inspire the next generations of space leaders.

We are proud to share that the progress UNISEC-Nepal has made in the community has been noteworthy and we are ever thankful to UNISEC-Global for making this possible with your support and guidance. We hope for your continuous support throughout our coming years and hope that together, we can make a difference in the Global Space Community

THANK YOU!

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