RESOLUTION AND PLANS for 2024
UNISEC-NEPAL

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UNISEC - Nepal

History of UNISEC-Nepal Activities

Established in *2020*

- *Participated in CLTP in 2022 and 2023*
- *Participated in MIC 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 and 2023*
- *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*

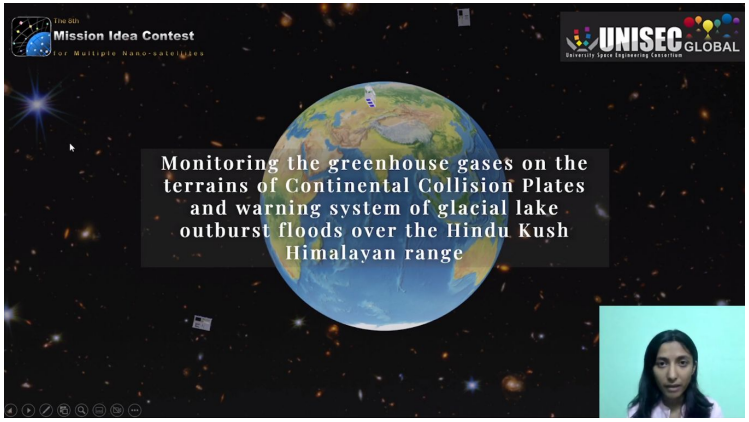
UNISEC-Nepal Activities in 2022-23

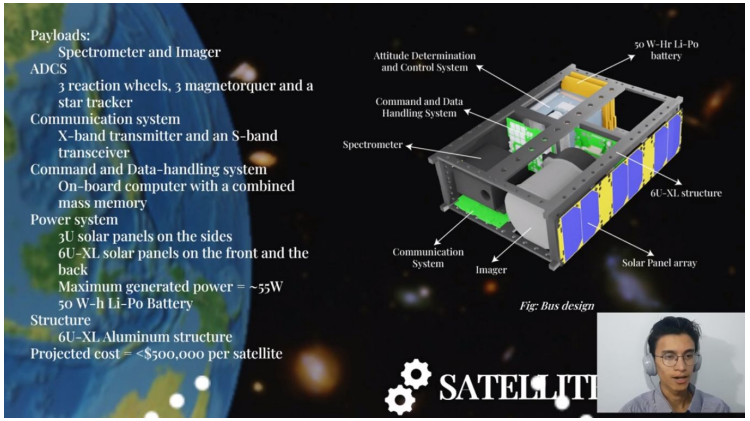
- Member Universities:
  - Kathmandu University,
  - Institute Of Engineering- Pulchowk College, Tribhuvan University
  - Khwopa Engineering College, Purbanchal University
  - Kathford International College
  - ACME College of engineering, Purbanchal University

- ***MIC8 PARTICIPATION : Awarded "THE STUDENT PRIZE"***
- ***CLTP12 PARTICIPATION***
- ***Hosted the 35th UNISEC GLOBAL Meeting and Regularly Participated in UNISEC GLOBAL Meetings***
- ***Collaborated with different national and international organization working in the field of Science and Technology***
- ***Organized Satellite Boot Camps all over Nepal***
- ***Developed E-Cube Educational Kits***
- ***Hand in Hand, worked on national CubeSat Projects***

UNISEC-Nepal Activities in 2023

MIC8 PARTICIPATION





- *Students from partner institution ; Institute of Engineering, Pulchowk Campus, Tribhuvan University, Nepal participated in MIC8 representing UNISEC-Nepal*
- *Presented on "Monitoring the GHGs on the terrains of the Continental Collision plates and warning system of GLOFs over the Hindu Kush Himalayan range"*
- *The team members were Bhawana Pokharel, Bibek Yonzan and Simonkrith Lamichhane*
- ***FINALISTS** and Awarded with **" THE STUDENT PRIZE "***

UNISEC-Nepal Activities in 2023

CLTP12 PARTICIPATION

- *Students from partner university; Institute of Engineering, Pulchowk Campus, Tribhuvan University, Nepal participated in CLTP-12 representing UNISEC-Nepal*
- *At Tokyo from August 21 to September 1, 2023*

UNISEC-Nepal Activities in 2023 (Cont.)

Hosted 35th UNISEC-Global Meeting

- *Theme - "Women 4 Space: Space-related Projects and Programs Led by Nepalese Women"*
- *Moderated by Ms. Ira Sharma*
- *Speakers were:*

***1. Opening Remarks** by **Dr. Sudip Bhattarai**, HOD of Mechanical and Aerospace Engineering, Pulchowk Engineering Campus, Tribhuvan University / POC UNISEC-Nepal*

***2. Earth Observations for reducing disaster risk in the Hindu Kush Himalaya** by **Dr. Mandira Shrestha,** Programme Coordinator of Climate Services initiative at ICIMOD*

***3. Astronomy in Nepal: An Effort to Create a Space Workforce in the Country** by **Manisha Dwa**, Nepal Astronomical Society*

***4. Satellite Projects by Antarikchya Pratisthan Nepal (Space Foundation Nepal)** by **Eliza Sapkota**, Satellite Research Fellow - APN*

UNISEC-Nepal Activities in 2022-23

Regular participation in the Virtual UNISEC-Global Meeting

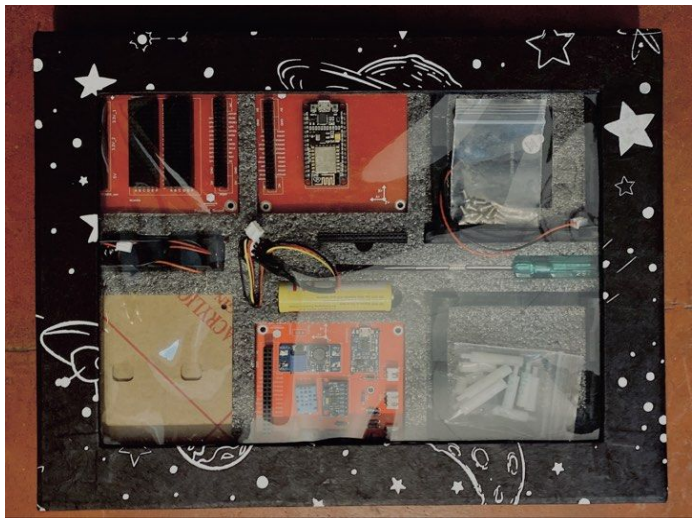
- *UNISEC-Nepal has showed regular participation in most of the UNISEC-Global Meetings*
- *Have been a great opportunity to connect, network and learn from other local chapters*
- *Participated by UNISEC-Nepal representatives*
- *Great exposure and each meeting was very insightful*
- *Grateful to UNISEC-Global Team*

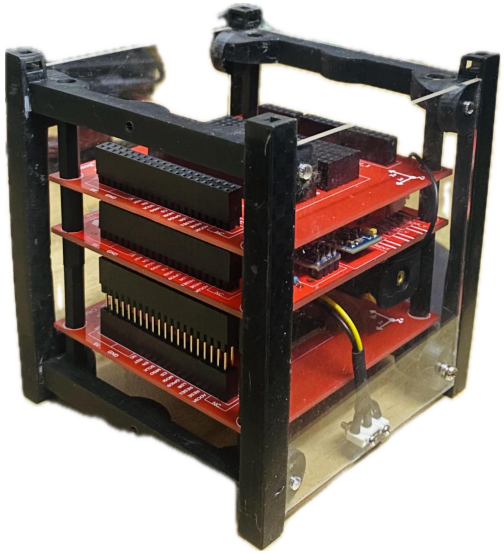
Glimpses of UNISEC-nepal participating in UNISEC-Global meeting ->

UNISEC-Nepal Activities in 2022-23

Development of E-Cube Set

- *The team also developed an E-Cube Set in 2023*
- *Inspired by HEPTA SAT structure*
- *Designed for anyone with little primary knowledge to professionals*
- *The kit contains OBC Board, EPS Board, Payload Board, Structure, Solar Panel, Wires, Screws, Acrylic Board, Deployment Switch, Battery, Battery Cap and Spacer*
- *We manufactured about 90 E-Cube kits in 2023*
- *training has also been provided to more than 800 students through different phases of Training Sessions*





UNISEC-Nepal Activities in 2022-23

Satellite Training/ Bootcamp

- *Was one of the collaborators for Nationwide Tinker Lab Program funded by National Commission for UNESCO and National Innovation Centre*
- *Organized by Antarikchya Pratisthan Nepal (Space Foundation Nepal)*
- *Conducted Trainings in all 7 provinces of Nepal*
- *For children of grade 6 to 12*
- *About 700 students inspired*
- *[illegible] d previous [illegible]*





Current Scenario of Space Projects:oing Practical Space Projects :

After the launch of Nepal's first Satellite, Nepali Sat-1 through BIRDS' Project, Nepal is now working on the upcoming few satellite projects namely:

1. ***MUNAL*** *- Nepal's first High School CubeSat planned to launch in first quarter of 2024*
2. ***PHI-1*** *(2022-24) - collaboration with UNOOSA*

Upcoming Satellite Projects: (Initial Stages)

1. ***Slippers 2 Sat : Journey from Slippers to Satellite*** *- A multi-year satellite project involving middle school children of marginalized Chepang Community in Nepal*

MAJOR CHALLENGES FACED in 2023:

i. ***Logistics : Transportation Safety***

- risk of huge number of road and flight accidents in Nepal

ii. ***Funding***

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

iii. ***Managing workstation***

- primarily due to funding

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

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

v. ***Adaptability to extreme geographic regions in Nepal***

- Nepal's extreme geographic region makes it difficult to reach to training areas
- Adapting to extreme temperatures (extreme hot/ extreme cold) is challenging too

vi. ***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

RESOLUTIONS FOR 2024

Learning from the challenges of 2023, in 2024 UNISEC-Nepal plans on:

- *Managing funds - Conducting paid trainings*
- *Increase human resource of reach to places all over Nepal to minimize transportation risk hassle*
- *Hope to collaborate with government to receive government support in terms of finance/ workstation management/ facilities.*

Plan for 2024 and beyond

Conduct National-level Amateur Radio and Satellite Training

- *Sub-project of the ongoing Slippers2Sat Satellite Project*
- *In Collaboration with Amateur Radio Digital Communication (ARDC) and Antarikchya Pratisthan Nepal (APN) and a few of them will also be under collaboration with Nepal Academy of Science and Technology (NAST)*

- *Planned to be organized all over Nepal ; provincial scale and then move to a national scale event*
- *Focuses on training module of TinkerLab Satellite Project conducted in 2023 in 7 provinces*

- *Focusing on Amateur Radio alongside Satellite Training*
- *The training team is the core senior team of S2S Satellite Project and members of UNISEC-Nepal*

Plan for 2024 and beyond

Conduct National-level Amateur Radio and Satellite Training (Continued..)

- *We have already completed this training in 2 Provinces : **Bagmati** (2 location, 3 schools each involved, a total of 75 students) and **Gandaki** (1 location, 3 schools involved, a total of 40 students)*

Project Manager Rishav Adhikari explaining E-Cube components to students

Students of Rainas involved in hands-on training

Students learning to solder in their designated matrix board

Students learning to integrate the E-Cube Set

- *Planning for Dharan (province 1) and Janakpur (province 2) in collaboration with Nepal Academy of Science and Technology in the coming few months*

Plan for 2024 and beyond

CAN SAT WORKSHOPS / COMPETITIONS

- *Plan on focusing on CanSat Workshops and Competitions*
- *Organizers include CLTP12 trainees in collaboration with SEDS-Pulchowk, SEDS Club of Pulchowk College*
- *At Institute of Engineering (IOE) at Pulchowk College*
- *Scheduled for 23rd, 26th and 27th of January,2023.*
- *Program is free for students of Pulchowk College and General Members of UNISEC-Nepal /SEDS-Pulchowk*

Plan for 2024 and beyond

E-Cube Plans:

i. Scale up E-Cube Kits

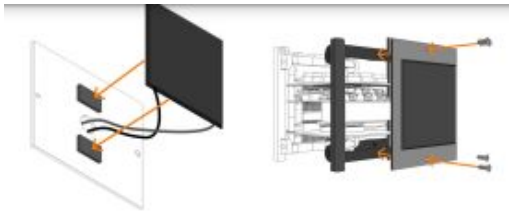
- *We were able to manufacture only about 100 kits in 2023*
- *Although it was effective, we still think we can improve to give children a better personalized experience*
- *Planning to scale up the E-Cube kits to 1000+ kits in 2024 and reduce cost*
- *100$ (make it less than that)*
- *make technical education accessible to a broader group*

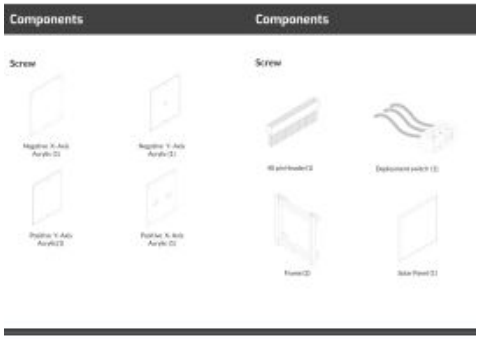
Plan for 2024 and beyond

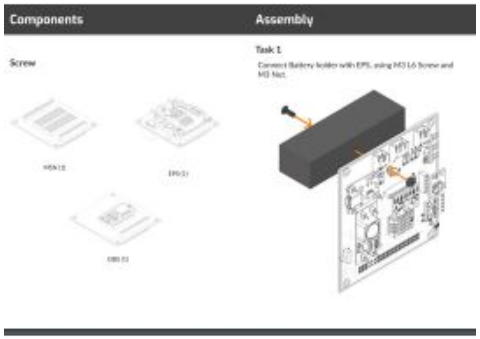
E-Cube Plans:

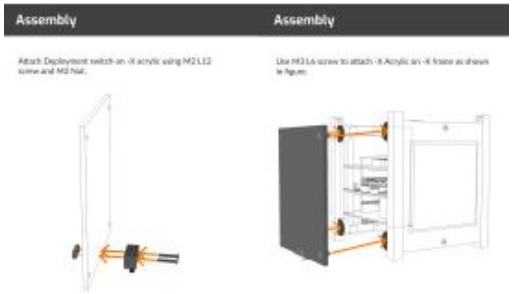
ii. E-Cube Online Course/ Learning Portal

- *an initial draft of E-Cube Online Course is being developed by UNISEC-Nepal team currently*
- *aim to create an open source portal to make E-Cube training accessible for everyone interested*
- *Plan on creating portal with course sections*
- *curated targeting people of any age willing to learn*









Plan for 2024 and beyond

GIS Satellite Data Analytics Training

- *Four day training in english, 20 hr course*
- *Online or in person*
- *The training will include satellite data including UHR four band 30cm resolution data files and all relevant codes necessary*
- *Three levels; beginners, intermediate and advanced*
- *Satellite data analytics through AI*
- *Future access to our online course for participants for revision, knowledge sharing and question/answer support*
- *minimum of 5 participants to conduct the training*
- *Fee: USD $200 per each participant*

- *Other training like AI Satellite Data Analytics and Space AI are also being curated and planned to be conducted in 2024*

Plan for 2024 and beyond

Aim to inspire 10000+ students in 2024

- *In 2023, we were able to connect and inspire more than 1000 students (including children and youths)*

- *In 2024, we plan on continuing our initiatives and achieve bigger milestones*
- *Alongside inspiring students and the national community through our ongoing satellite projects, we plan on curating more outreach activities and aim to inspire 10000+ students*

- *We plan on making both digital and hands-on learning accessible for all this year*
- *For that, we are looking for collaborations with educational institutions, national and international organizations for financial support and training/working with interested human resource*

Plan for 2024 and beyond

Month	Plan
January - March	Trainings + CanSat Workshop
April - June	Participate in Space Con 2024 in Nepal + E-Cube Kits Prepare +GIS Satellite Data Analytics Trainings
July- September	E- Cube Portal Launch + E - Cube Trainings + Continue with CanSat workshops
October - December	Plan on organizing annual national Can Sat competition

This is the initial plan, events shall be planned and added along the way, too

PRIORITIES

1. EDUCATION

- *emerging country in Space industry*
- *lack of primary knowledge*
- *aim to empower the space industry by collaborating to produce capable human resource*
- *education is no.1 priority*
- *educating through Satellite bootcamps, planning CanSat trainings and competitions*
- *increasing collaboration with current tinkerlabs, makerspace*

2. Support National Space Projects

- *emerging country in Space Industry*
- *support national space projects*
- *training youths/ generating capable human resource*
- *collaborating with organizations*

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 upcoming generations onto STEM

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!

Presented by:
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