



39th Virtual UNISEC-Global Meeting

Theme: “UNISEC-Global Activities”

CLTP 12 briefing session



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Al-Farabi Kazakh National University, Kazakhstan

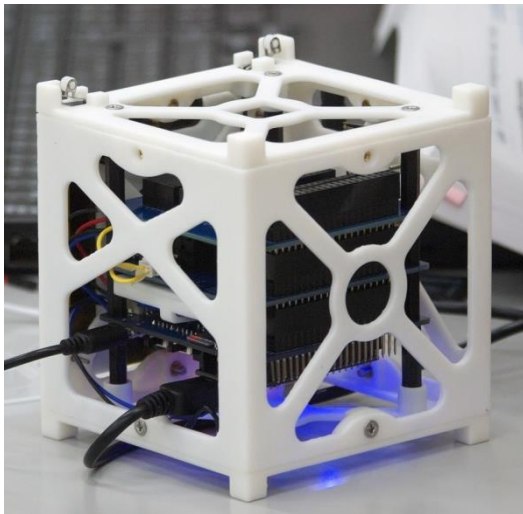
CLTP 12 Graduate

December 16, 2023

CLTP 12 was organized in Nihon University(Chiba, Japan) and AOTS (Tokyo, Japan)

Preliminary online-Lectures: July 17- August 20, 2023

Date: August 21 - September 1, 2023



Toolkit:
HEPTA-Sat (**H**ands-on **E**ducation **P**rogram
for **T**echnical **A**dvancement)

The training consists of a hands-on learning steps with
CubeSat type classroom satellite kit.

It is equipped with six primary subsystems:

Electrical
Power
Supply

Command
and Data
Handling

Communic
ation

Ground
station

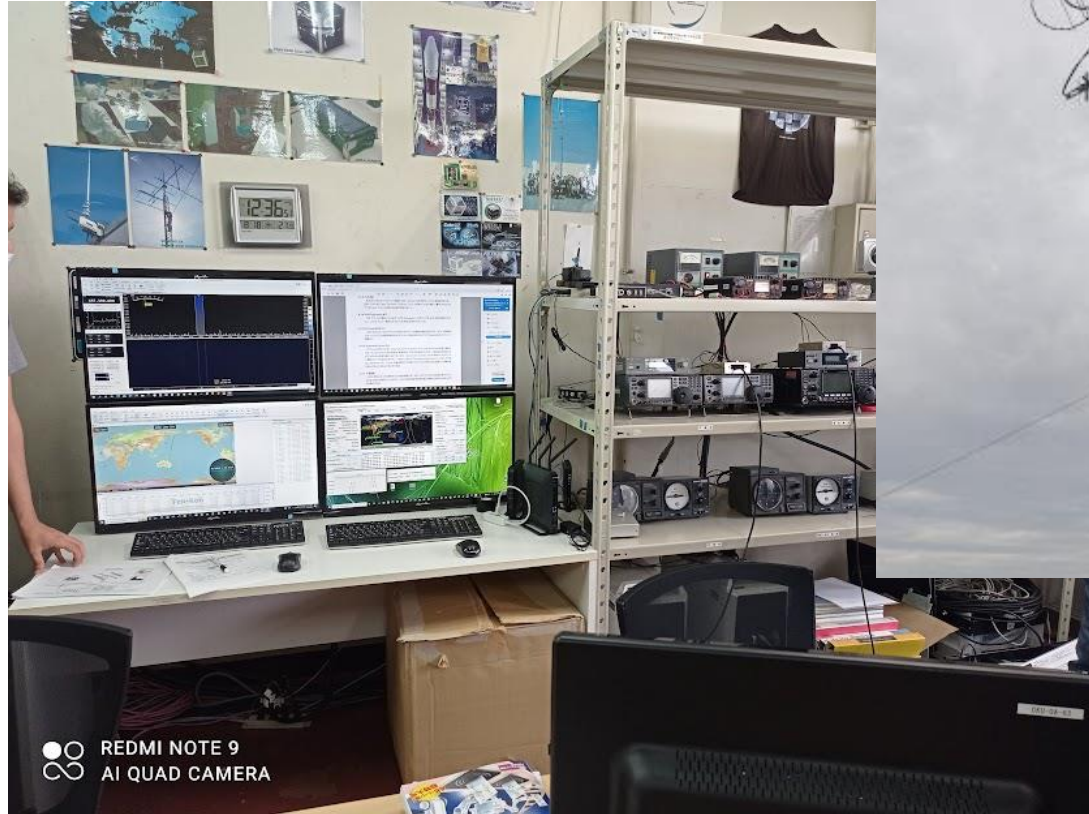
Sensor

Structure

The goal of Training

- to have participants experience how a system is composed of elements and sub-elements, to understand the relationship between the whole system and elements;
- to acquire a thorough understanding of System Engineering and Project Management in order to realize large and complicated systems;
- To increase understanding and create knowledge through experiencing sharing, verbalizing, deduction and internalizing in a knowledge Management Based System

Campus tour



Day 1

Day 2

Day 3

Covered lab0-lab6

- Introduction
- Electric power subsystem
- Command & data handling subsystem
- Sensor subsystem
- Communication subsystem
- Structure subsystem



Day 4

Day 5

Covered lab7-lab8

Mission design of HEPTASat

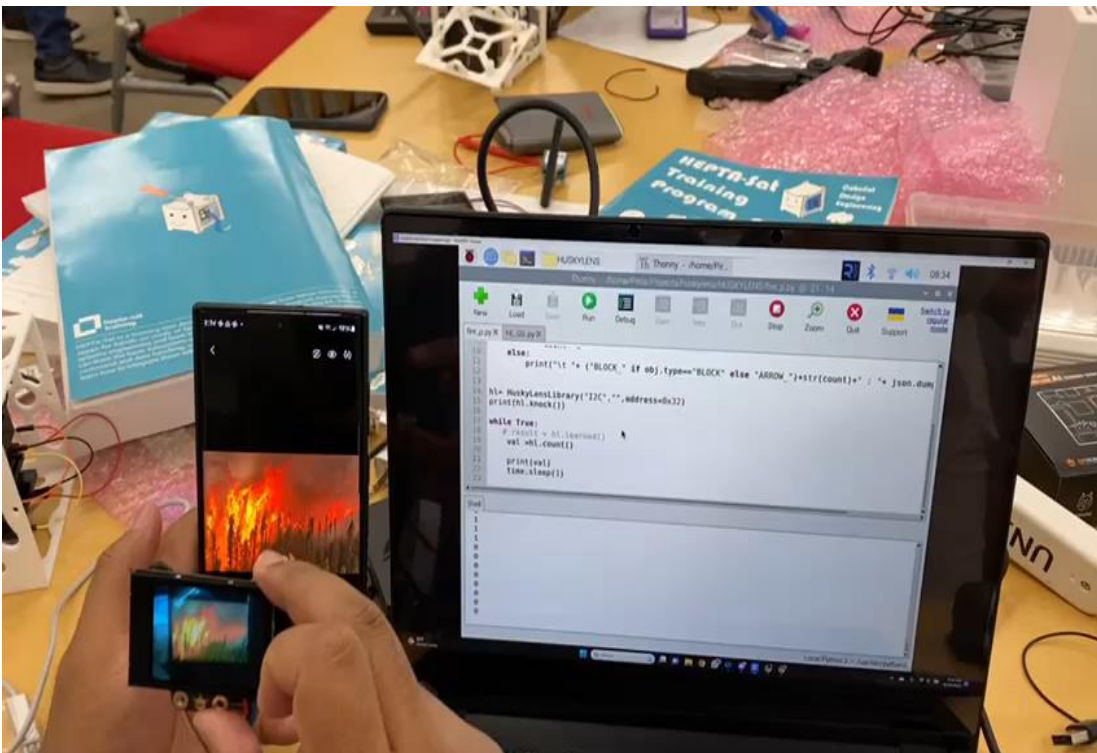
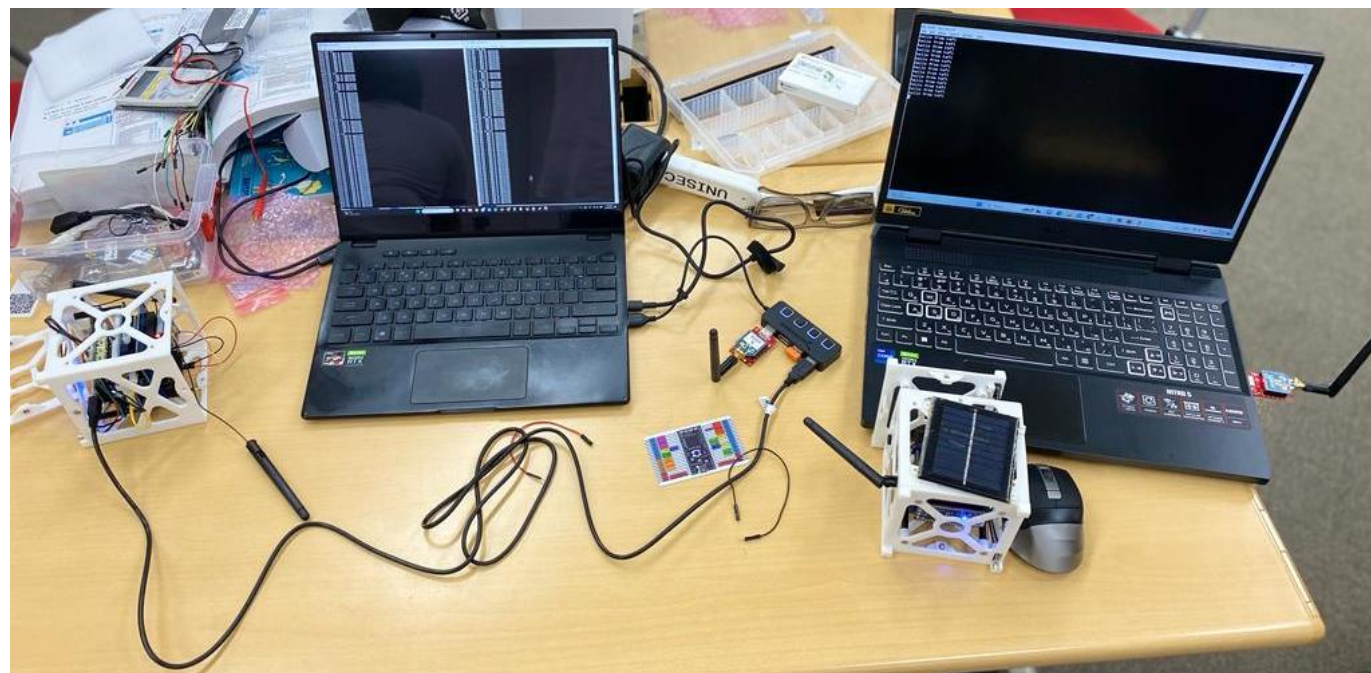
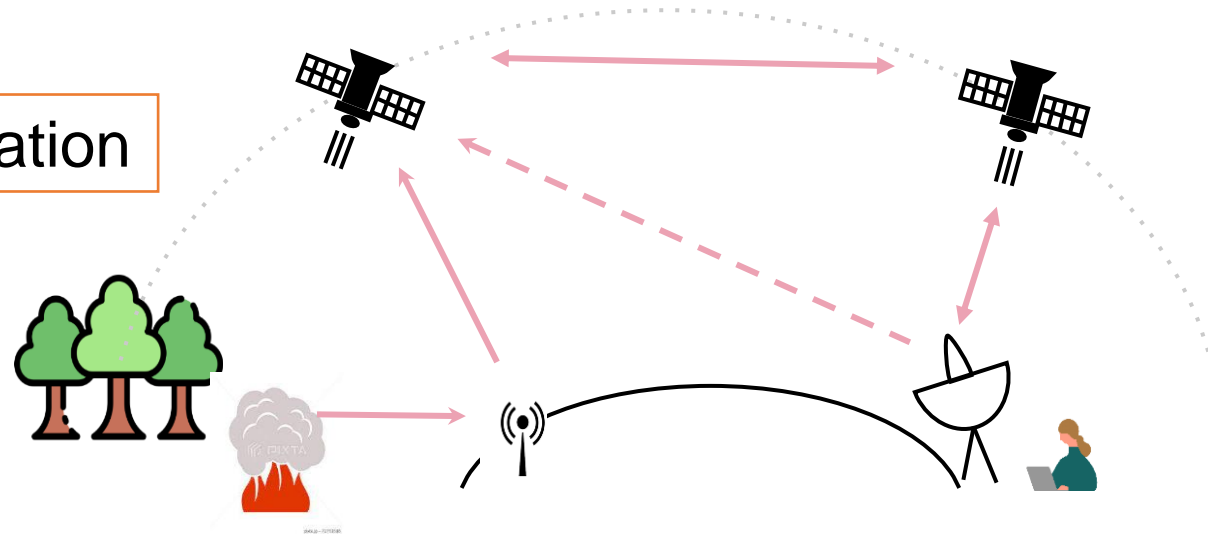


Day 8

Day 9

Covered lab7-lab8

Mission implementation



Covered lab7-lab8

FHANNY-SAT

Mission result presentation

Abdulla Hil Kafi, Nazgul Kaliyeva,
Hari Ram Shrestha, Fred Joe Nambala



9. Experimental Result



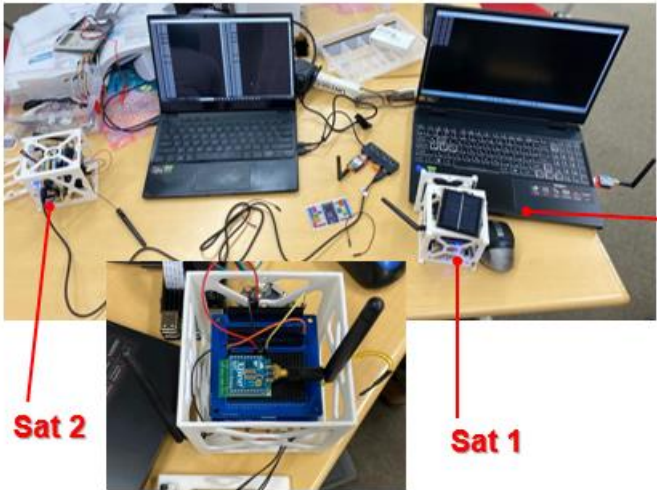
Summary of Success Evaluation

- The communication test verifies whether GS and Sat can communicate with each other using lasers.

Success Level	Goal No.	Mission Success Criteria	Verification Method	Result
MINIMUM Success	(M1)	Establishment of two satellites communication with ground station	Receiving acknowledgement from the nearest satellite and sending data to GS	SUCCESS
	(M2)	Establishment of two satellites	Receiving acknowledgement	

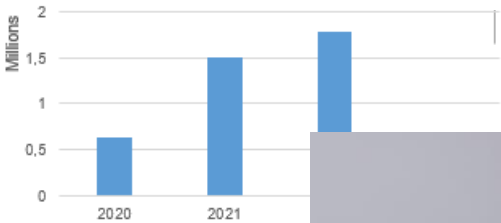
8. Experimental Set-up

2nd test set up



1. User Needs/Background

- NOAA series satellites (AVHRR radiometer with and EOS (Terra and Aqua with MODIS radiometer) of 2 330 km) used for fire detection.
- Each of these satellite systems allows for operation with data acquisition at least 6 times a day (NOAA series satellites).



Day 10

Visit Japanese space companies



Axelspace, Space BD, Astroscale, ArkEdge

Day 11

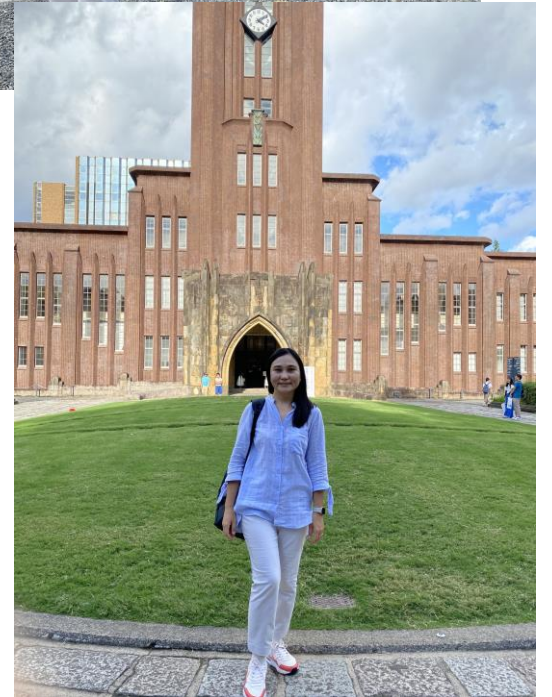
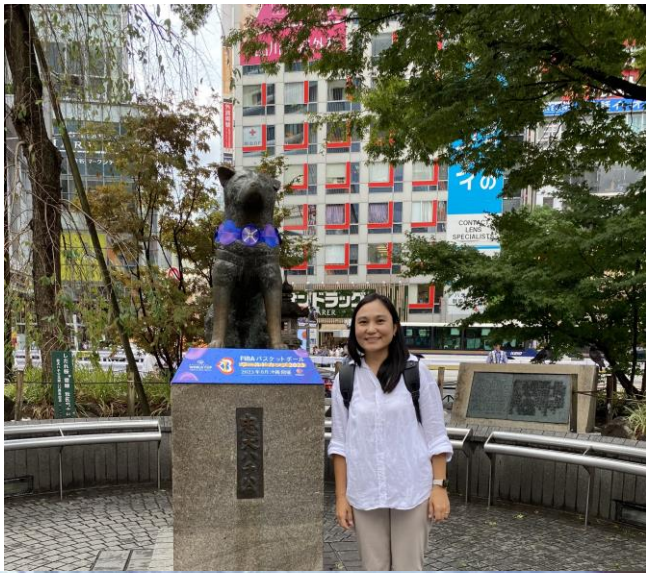
Day 12

Covered lab9

Teaching practice



ArkEdge Space, IHI Aerospace, IHI corporation, Japan Manned Space Systems Corporation, NEC, Hatta Yamonoto Propolsion Engineering and Research and other



Thank you for your attention!

