CLTP Session

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Agenda

- About CLTP
- Intended Learning Outcomes of CLTP
- Educational versus Flight Model (CubeSat) Satellites
- CLTP History
- CLTP Participants
- Lesson Learned
- Future Prospective

CLTP - Partcipation

CLTP 1
(Participant)

CLTP 2
(Observer)

CLTP 7 – iCanSat
(Participant)

CLTP 8 – HEPTA-Sat
(TA)

About CLTP

The CubeSat/CanSat Leader Training Program (CLTP) is a training course that was established for participants to experience the entire cycle of CubeSat/CanSat development from the design to launch of model rockets. Through the program, you will learn the space technology and teaching methods utilized in space engineering.

Intended Learning Outcomes of CLTP

- Realizing the Vision of UNISEC-Global, "*By the end of 2030, let's create a world where university students can participate in practical space projects in more than All countries*"
- Experience the whole AIT (Assembly, Integration, and Testing) processes of an educational satellites.
- Develop and realize a payload subsystem.
- Practice teaching of educational satellite engineering to a group of people with different background.
- Disseminate the CubeSat/CanSat technical knowledge to his/her local community (Localize the CLTP)

Educational versus Flight Model (CubeSat) Satellites

Category	Subsystem/Test	Educational	Flight Model
Subsystems	EPS	○	○
	Communication	○	○
	ADC	△	○
	C&DH	○	○
	Structure	○	○
	Thermal	×	○
Testing	Vibration	○	○
	Thermal	△	○
	Thermal Vacuum	×	○
	Radiation	×	○
Time	Development	0.25-6 months	1-2 years
	Operation	5-600 seconds	0.5 – 5 years

CLTP Educational Satellite Kits

Build CanSat From Scratch
CLTP1 & CLTP2

iCanSat (AIT and payload)
CLTP3, 4, 5, 6, and 7

HEPTA-Sat (AIT and payload)
CLTP 8, 9, 10, 11, 12, and 13

History of CLTP

CanSat Kit (iCanSat)

CubeSat Kit (HEPTA-Sat)

CLTP3 CLTP5 CLTP7 CLTP9 CLTP11 CLTP13

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

CLTP1 & CLTP2 CLTP4 CLTP6 CLTP8 CLTP10 CLTP12

Build Whole CanSat from Scratch

AIT and Mission Design and Engineering

History of CLTP - Managers

Prof. Shinichi NAKASUKA,
UoT

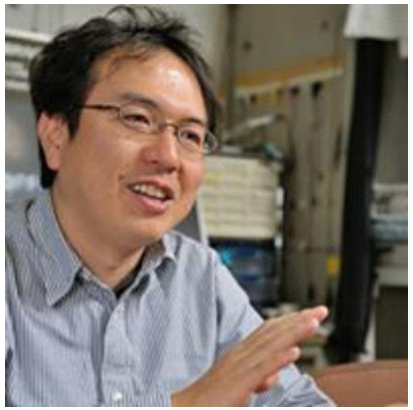
Ms. Rei KAWASHIMA,
UNISEC-Global

Prof. Yasuyuki MIYAZAKI
Nihon University & JAXA,
CLTP2

Prof. Harunori NAGATA
Hokkaido University

Prof. Toshinori KUWAHARA
Tohoku University

Prof. AKIYAMA Hiroaki
Wakayama University
CLTP1



Prof. Hironori SAHARA
TUM, iCanSat, CLTP3

Prof. Seiko SHIRASAKA
Keio University, CLTP4

Prof. TOTANI Tsuyoshi
Hokkaido University
CLTP 5, 6, and 7

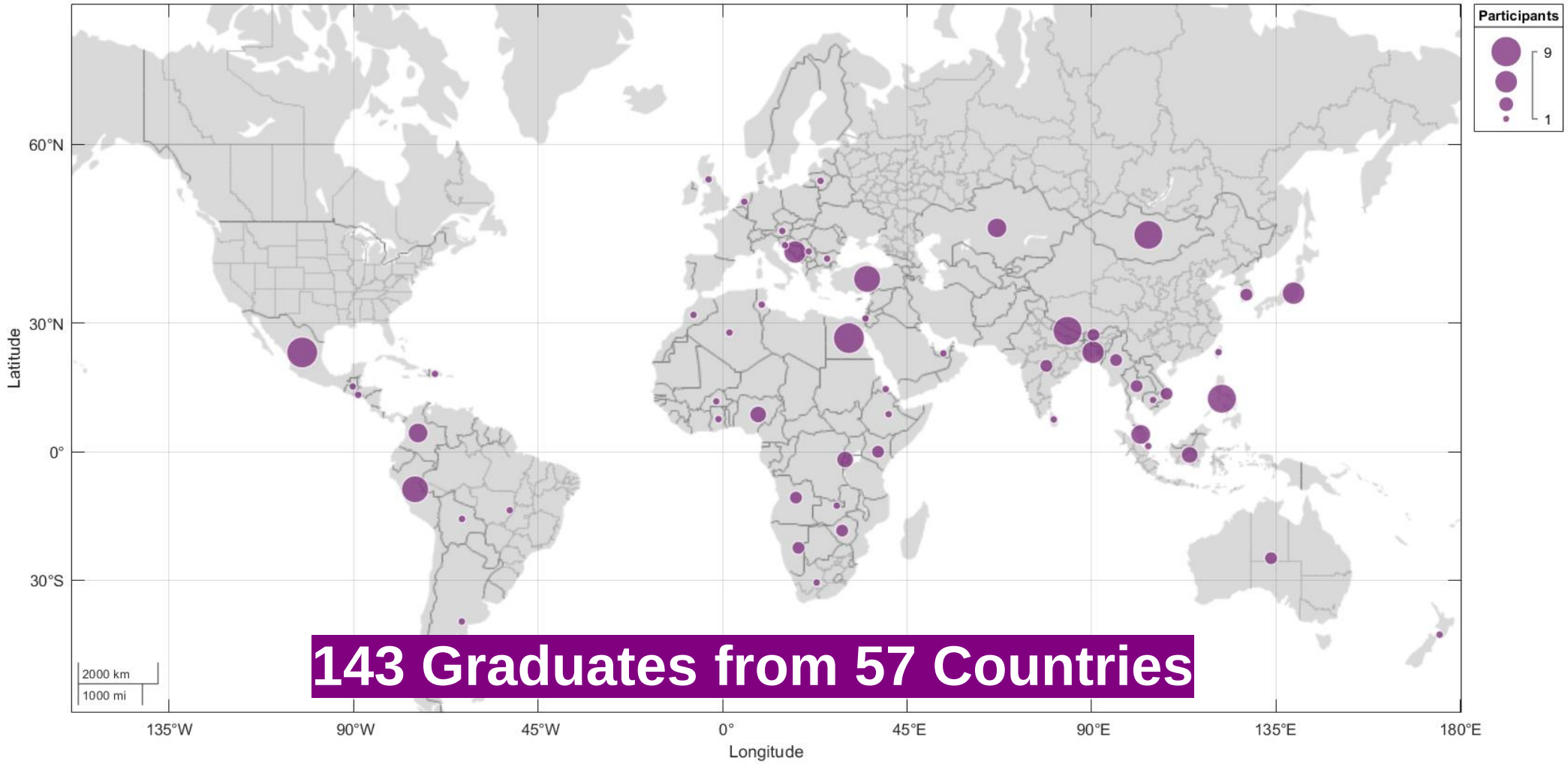
Prof. Hiraku SAKAMOTO
TITECH

Prof. Masahiko YAMAZAKI
Nihon University, Hepta-Sat
CLTP 8, 9, 10, 11, 12, and 13

CLTP Graduates

UNISEC GLOBAL
University Space Engineering Consortium

CLTP Participants Distribution



143 Graduates from 57 Countries

Lesson Learned

- Educational kits are indispensable for teaching Satellite Engineering in a limited time frame.
- Payload subsystem is curial in any satellite and focus should be given to this subsystem.

Future Prospective

- Localize HEPTA-Sat Training to UNISEC-Local Chapters.
- Conduct more advanced CubeSat training in CLTP offered by UNISEC-GLOBAL in Japan
- Joint collaboration among CLTP graduates to develop a Flight Model (FM) CubeSat and launch it to space.

Thank you