

UTOKYO GNSS Technology Promotion Activities

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Overview

- Conduct GNSS Training, Workshops and Seminars
 - Indonesia, Thailand, Vietnam, Philippines, Singapore, Malaysia, India, Nepal, Cambodia, Morocco
 - Conduct Training in Collaboration with ICG
- Installation of GNSS CORS
 - Install GNSS CORS in Universities around the world for joint research, GNSS technology promotion, and capacity-building
 - Indonesia, Vietnam, Philippines, Malaysia, Laos, Singapore, Nepal, Cambodia, Australia, Rwanda, Mozambique, Morocco
- Conduct Joint Research and Pilot Projects
 - High-Accuracy Survey (RTK & MADOCA PPP)
 - Traffic Monitoring
 - Urban City Environment Monitoring
 - Space Weather
 - Any GNSS-based Application of your interest
- JIS (Jamming, Interference and Spoofing) Test
 - Create awareness of spoofing attacks
- Develop Low-Cost Receiver Systems for
 - High-Accuracy based on
 - RTK: RTKDROID - RTK in Android
 - MADOCA PPP
 - MADROID: MADOCA-PPP in Android
 - MAD-WIN: MADOCA-PPP in Windows
 - MAD-PI: MADOCA-PPP in RaspberryPi Device
 - Space Weather Data Analysis
 - Dynamic Air Quality Monitoring
- RPD (Rapid Prototype Development) Challenge
 - Organize RPD Challenge as a part of the MGA (Multi-GNSS Asia) activity
 - Encourage students and researchers to bring solutions and business values by solving real-life problems
- GNSS Summer School
 - Organized by TUMSAT (Tokyo University of Marine Science and Technology)
 - Held every year in Tokyo

Summary of GNSS Trainings: Jointly Organized by UTokyo and ICG/UNOOSA

Course A: GNSS Data Processing for High-Accuracy Positioning using Low-Cost Receiver Systems / Course B: GNSS for Policy and Decision Makers

Training Mode / Location	GNSS Training Venue: IOE, Nepal		Hybrid-Training Venue: Nepal		Hybrid-Training Venue: Nepal		Online GNSS Training		GNSS Trainings Venue: AIT, Thailand		
	12 – 16 Feb 5-days	12 – 14 Feb 3-days	3 – 6 Jan 2023 (Hybrid) 4-days	9 Jan 2023 (Online) 1-day	11 – 14 Jan 2022 4-days	28 Jan 2022 1-day	19 – 21 Jan 2021 3-days	28 Jan 2021 1-day	JAN 2020 5-days	JAN 2019 5-days	JAN 2018 4-days
Course Type	Course A	Course B	Course A	Course B	Course A	Course B	Course A	Course B	T-151	T-151 T-131	T-141
(A) ICG Funded International (travel only)	8	NA	NA	NA	Cancelled due to Corona	NA	NA	NA	19	23	14
(B) Other Funding (travel only)	NA	NA	NA	NA	NA	NA	NA	NA	X	4 ^E	X
(C) Self Funded International	3	4	3 (India, Sri Lanka)	NA	Cancelled due to Corona	NA	NA	NA	34	40	11
(D) Self-Funded Domestic (Host Country)	15	14	30 (On-Site Nepal)	NA	30 (On-site Nepal)	NA	NA	NA	18	27	42 (24 + 18)
(E) Online Participants	NA	NA	180	30	45	25					
Total (A + B + C + D + E)	26	18	210	30	75	25	270	160	71	94	67
Number of Applicants			320	200	90	40	360	190	160+	180+	80+
Number of Resource Persons	6	3	12	2	13	3	15	6	16 7 (Int) + 9 (GIC)	20 11 (Int) + 9 (GIC)	13 7 (Int) + 6 (GIC)
Number of Countries	8	5	49	45	16	10	70+	60+	15	15	15
Resource Persons' Countries	4	4	5	2	7	2	4	3	4	7	4

Installation of Base-Stations in Universities for Capacity Building

Country	Place	University	Receiver Type
Indonesia	Jakarta	University of Indonesia	GNSS, GNSS + MADOCA
Japan	Tokyo-A	The University of Tokyo	GNSS, GNSS + MADOCA
Japan	Tokyo-B	Tokyo University of Marine Science & Tech.	GNSS, GNSS + MADOCA
Japan	Tokyo-C	KEIO University	GNSS
Laos	Vientiane	National University of Laos	GNSS
Malaysia	Kuala Lumpur	Malaysia Japan International Institute of Tech.	GNSS, GNSS + MADOCA
Myanmar	Yangon	Yangon Technological University	GNSS
Thailand	Bangkok	Chulalongkorn University	GNSS, GNSS + MADOCA
Thailand	Pathumthani	Asian Institute of Technology	GNSS
Thailand	Bangkok	Kasetsart University	GNSS
Thailand	Khon Kaen	Khon Kaen University	GNSS
Philippines	Manila	University of the Philippines	GNSS, GNSS + MADOCA
Vietnam	Ho Chi Minh City	International University Vietnam National University	GNSS
Vietnam	Hanoi	Will be installed early next year	GNSS + MADOCA
Mozambique*	Maputo	Universidade Eduardo Mondlane	GNSS
Singapore	Singapore	Nanyang Technological University	GNSS + MADOCA
Australia	Perth	Curtin University	GNSS + MADOCA

12 – 16 DEC 2016

- Organized by Survey Dept. of Nepal and UNOOSA/ICG
- **Total 154 participants from 32 different countries**
- **66 International participants from 31 countries**
- 25 International participants were fully funded by ICG
- Full Five days workshop including ICG's IDM WG Meetings

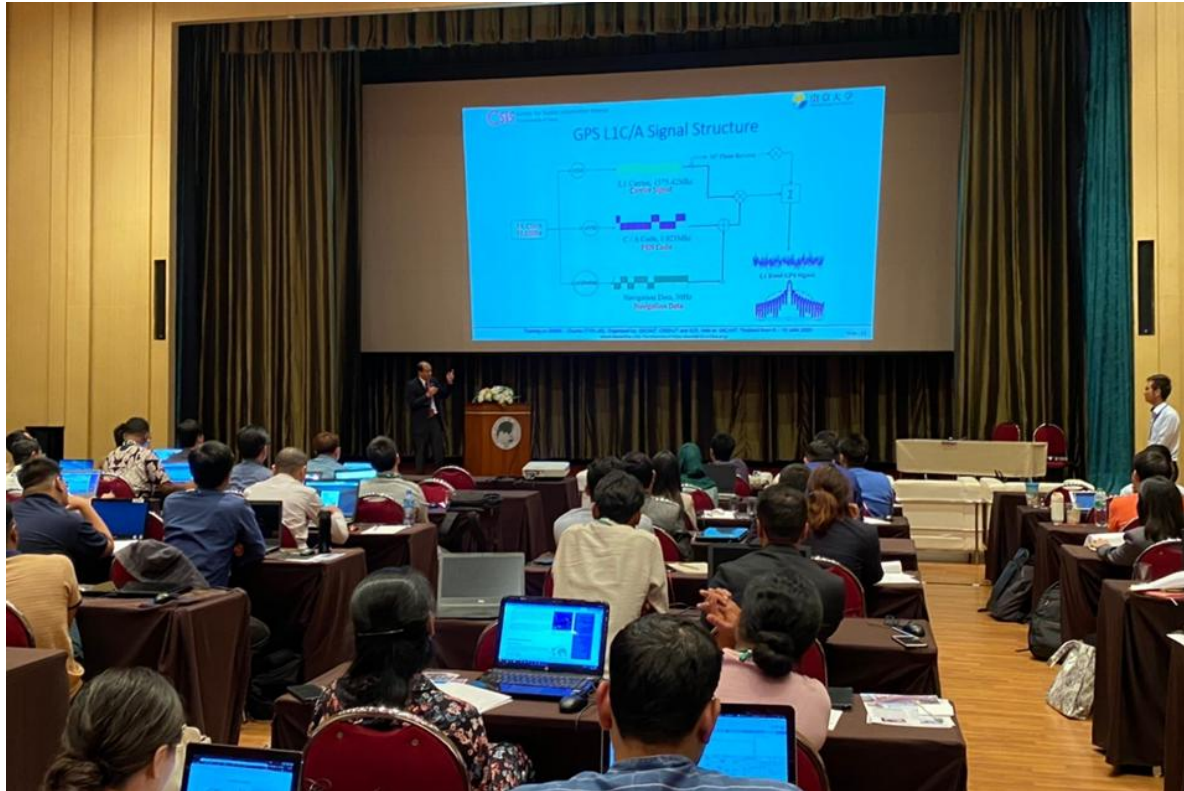


Global Navigation Satellite System (GNSS) Training, Course T-151

6 – 10 JAN 2020, AIT Conference Center, AIT, Thailand



GNSS Training Lectures : 2020



GNSS Field Survey and Data Processing, 2019



MADOCA / GNSS Training at AIT, Thailand and UI, Indonesia



MADOCA / GNSS Training at AIT, Thailand



MADOCA / GNSS Training at AIT, Thailand



MADOCA / GNSS Training at AIT, Thailand



GNSS Lecture at University of Indonesia

UT / ICG GNSS Training, Tribhuvan University (TU), Nepal

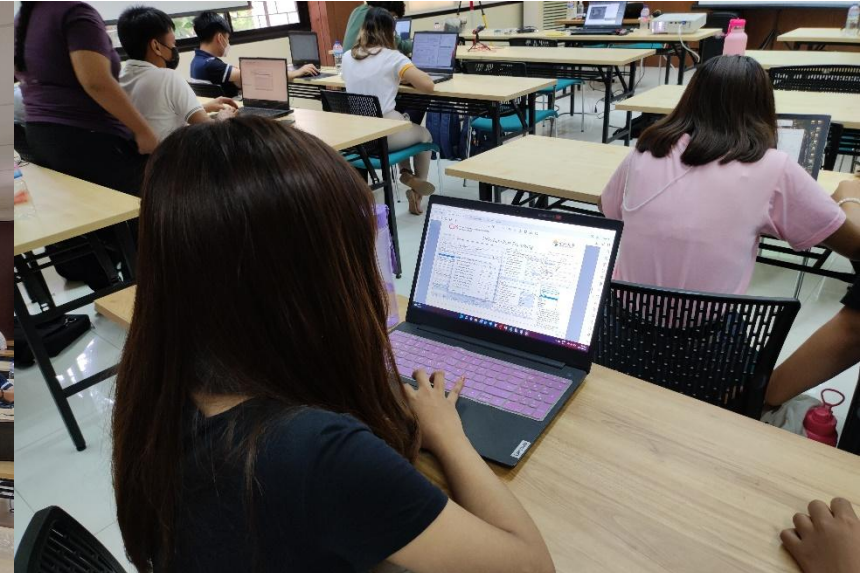


Construction of Bench Mark for GNSS Training
Purpose: Compare GNSS accuracy based on various processing techniques such as SPP, DGPS, SBAS, RTK, PPK, MADOCA PPP, PPP etc.



GNSS Base-Station setup at TU,
Paschimanchal Campus, Pokhara

GNSS / MADOCA Training at IU/VNU, HCM City, Vietnam



GNSS / MADOCA Training at University of Philippines



GNSS Training at CRASTE-LF, Morocco



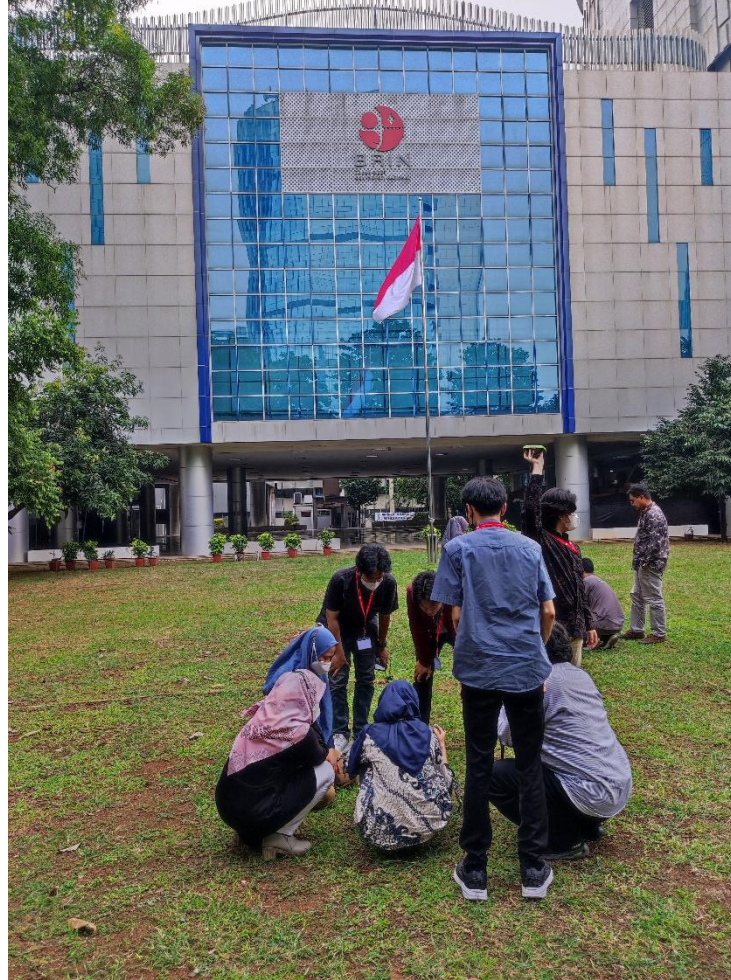
UTokyo / ICG GNSS Training at IoE, Pulchowk Campus, Nepal



Antenna setup on the bus roof for traffic data acquisition



Workshop on QZSS MADOCA PPP for BRIN, Indonesia



MADOCA PPP High Accuracy Assessment by BIG, Indonesia



GNSS Training at the University of the Philippines



Link for Reference Materials

- Lab Home Page
 - <https://www.csis.u-tokyo.ac.jp/en/>
 - <https://home.csis.u-tokyo.ac.jp/~dinesh/>
- GNSS Training Materials, Data etc.
 - https://home.csis.u-tokyo.ac.jp/~dinesh/GNSS_Train.htm
- Low-Cost High-Accuracy Receiver Systems
 - <https://home.csis.u-tokyo.ac.jp/~dinesh/LCHAR.htm>
- GNSS Webinar
 - <https://home.csis.u-tokyo.ac.jp/~dinesh/WEBINAR.htm>
 - <https://gnss.peatix.com>
- Link to Documents, Software, Android APP etc.
 - <https://home.csis.u-tokyo.ac.jp/~dinesh/Download.htm>
- Facebook : <https://www.facebook.com/gnss.lab> (GNSS Related)
- Contact : dinesh@csis.u-tokyo.ac.jp