

UTokyo/ICG GNSS Training, 11 – 14 January 2022

GNSS Education Activities The University of Tokyo

Dinesh Manandhar, Associate Professor (Project)

Center for Spatial Information Science (CSIS), The University of Tokyo

dinesh@csis.u-tokyo.ac.jp

Overview

- Research on GPS/GNSS and Related Fields
 - GNSS Signal Design and Signal Analysis
 - GNSS Authentication System Development
 - To protect from Spoofing attacks
 - Indoor Navigation System
 - E.g. IMES (Indoor Messaging) for Indoor Navigation
 - Integration with other sensors such as UWB, WiFi, BT
 - Software Defined Radio or Software Receiver
 - Low-Cost High-Accuracy GPS Receiver System Development
 - Develop receiver systems that costs less than \$100 to provide accuracy better than 100cm
- Conduct Lectures, Trainings, Seminars, Workshops, Webinars
 - Basically in Asian countries
- Joint research, pilot projects with Universities, Companies and Organizations

GNSS Trainings, Workshops and Seminars

- Conduct GNSS Trainings, Workshops and Seminars
 - Basically in Asian countries
 - Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, The Philippines, Vietnam
 - Bangladesh, India, Singapore, Sri Lanka (?) (planned in 2019)
 - Also, Some African Countries
 - Mozambique, Rwanda
- Regular Training is conducted at AIT in JAN every year with support from ICG/UNOOSA
 - Training in January, 2018
 - https://home.csis.u-tokyo.ac.jp/~dinesh/T141_30.htm
 - Training in January, 2019
 - https://home.csis.u-tokyo.ac.jp/~dinesh/GNSS_Train.htm
 - Training in January, 2020 (Travel only funding)
 - Training in January, 2021 (Online)
 - Training in January, 2022 (Hybrid)
 - Local Host, CSSGS, Pokhara, Nepal
 - FaceBook: <https://www.facebook.com/gnss.lab>

Country	Place	University	Receiver Type		
			GNSS	GNSS/MADOCA	MADOCA Low Cost
Indonesia	Jakarta	University of Indonesia	NetR9	MSJ	Yes
Japan	Tokyo-A	The University of Tokyo	NetR9	NA	Yes
Japan	Tokyo-B	Tokyo University of Marine Science & Tech.	NetR9	MSJ	Yes
Japan	Tokyo-C	KEIO University	NetR9	NA	Yes
Laos	Vientiane	National University of Laos	NetR9	NA	SW only
Malaysia	Kuala Lumpur	Malaysia Japan International Institute of Tech.	NetR9	MSJ	Yes
Myanmar	Yangon	Yangon Technological University	NetR9	NA	SW only
Thailand	Bangkok	Chulalongkorn University	NetR9	MSJ	Yes
Thailand	Pathumthani	Asian Institute of Technology	NetR9*	NA	Yes
Philippines	Manila	University of the Philippines	NetR9	MSJ	Yes
Vietnam	Ho Chi Minh City	International University	NetR9	MSJ*	Yes
Mozambique	Maputo	Universidade Eduardo Mondlane	NetR9	NA	NA
Singapore	Singapore	Nanyang Technological University	NA	MSJ	Yes
Australia	Perth	Curtin University	NA	MSJ	Yes

GNSS Training organized at AIT, Thailand every year in JAN from 2018 – 2020, jointly organized with ICG/UNOOSA and AIT



University of Indonesia, Aug 2017



Yangon Technological University, Myanmar



International University, HCM City, Vietnam



GNSS Training in Laos, Feb 2018,



GNSS Seminar in 2016, 2017 and 2018 National Institute of Metrology, Thailand (NIMT)



International University, HCM City, Vietnam

Lecture on how GPS can help to fishermen



About 50 local fishermen attended the program

May 2018

GNSS Training, Workshops, Lectures etc.

		Country	2017	2018	2019	2020	Total Number of Trainees
ABN	MADOCA	Indonesia	Training, Lectures	Training, Lectures		Training, Online Lectures	100+
		Vietnam	Training, Lectures		Training		70+
		Thailand	Training, Lectures	Training, Lectures	Training, Lectures	Training, Lectures	400+
		Malaysia	Training, Lectures		Training		50+
		Myanmar	Training, Lectures	Training, Lectures			50+
		Philippines	Training, Lectures	Training, Lectures	Training, Lectures	Training, Lectures	200+
		Laos	Training, Lectures		Training		100+
		Singapore			Seminar, Workshop	50+	
		Australia				Training	30+
		Mozambique		Training, Lectures	Training		50+
		India				Lectures	60+
		Nepal	Training, Lectures	Training, Lectures	Workshop, Lecture	Lecture	300+
		Egypt				Training, Lectures	50+

GNSS Training : Jointly Organized with ICG/UNOOSA

← ONLINE →

Participants Information	JAN 2021 19 – 21 JAN	JAN 2021 28 JAN	JAN 2020	JAN 2019	JAN 2018
	Course A	Course B	T-151	T-151/T-131	T-141
Number of Participants	150+	100+	71	94	67
Applicants	360 (270 Selected)	190 (160 Selected)	160+	180+	80+
Number of Countries	70+	60+ tbc	15	15	15



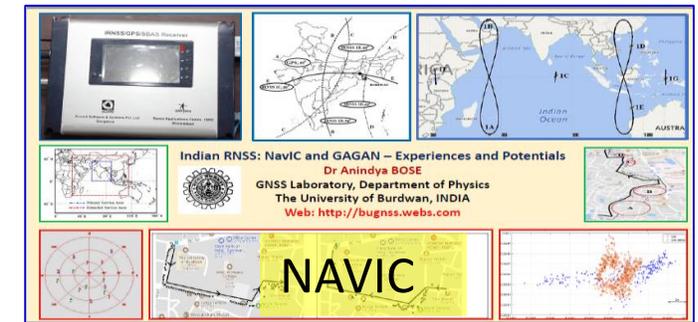
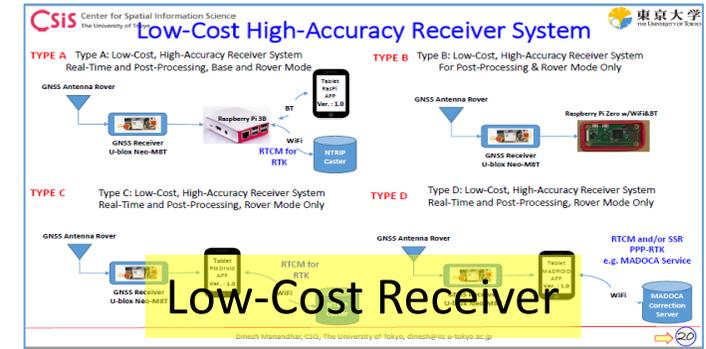
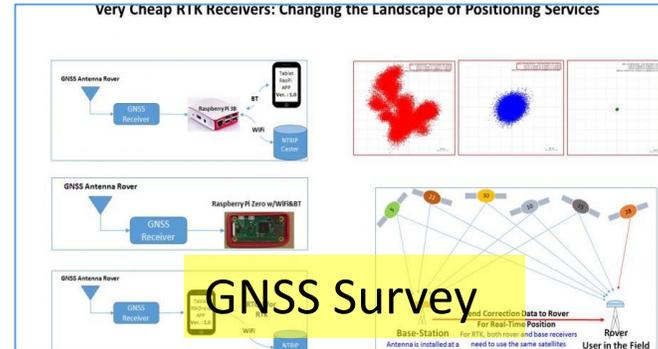
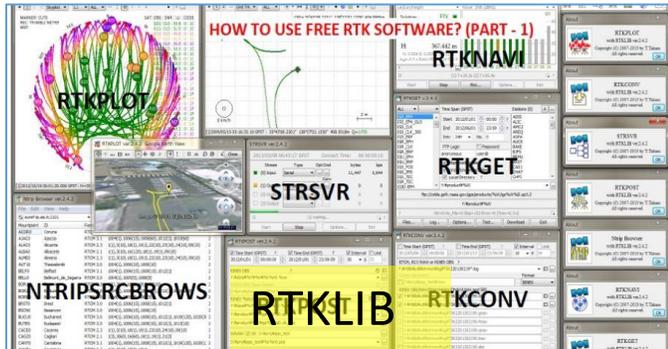
GNSS Training, Course T-151 and GNSS for Policy and Decision Makers, Course T-131

14 – 18 January 2019

AIT Conference Center, AIT, Thailand



GNSS Webinar with MGA



Webinar Registration : <http://gnss.peatix.com>

Past Webinar Reference: <https://home.csis.u-tokyo.ac.jp/~dinesh/WEBINAR.htm>

We need YOU as a Resource Person. Please contact us....

UN-Nepal Workshop on GNSS

The screenshot shows a web browser displaying the UN Office for Outer Space Affairs (OOSA) website. The URL in the address bar is unoosa.org/oosa/en/ourwork/psa/schedule/2016/2016-nepal-workst. The page header includes the UN logo and the text "UNITED NATIONS Office for Outer Space Affairs". There are social media icons for Twitter, Facebook, YouTube, and Instagram, along with a search bar. A navigation menu contains links for "About Us", "Our Work", "Benefits of Space", "Information for...", "Events", and "Space Object Register". Below this, there are links for "Documents" and "COPUOS 2018". The main content area shows a breadcrumb trail: "Our Work > Programme on Space Applications > Schedule of Activities > 2016". The main heading is "United Nations/Nepal Workshop on the Applications of Global Navigation Satellite Systems" in green text. Below it, the location and dates are "KATHMANDU, NEPAL, 12 - 16 DECEMBER 2016". The text describes the workshop as organized jointly by the UN OOSA and the Survey Department of the Ministry of Land Reform and Management of Nepal, and co-organized and co-sponsored by the International Committee on Global Navigation Satellite Systems (ICG) and GfRmbH Galileo Control Centre, German Space Agency (DLR). On the right side, there is a sidebar titled "Our Work" with a list of links: "Secretariat of COPUOS", "Programme on Space Applications", "PSA News", "Fellowships", "Schedule of Activities", and a list of years from 2018 to 2012, with 2016 highlighted in blue.

← → ↻ 🏠 | unoosa.org/oosa/en/ourwork/psa/schedule/2016/2016-nepal-workst 📖 ☆ ☰ 📝 🗺️ ⋮

 UNITED NATIONS
Office for Outer Space Affairs

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Search 🔍

About Us ▾ Our Work ▾ Benefits of Space ▾ Information for... ▾ Events ▾ Space Object Register ▾

Documents ▾ COPUOS 2018 ▾

[Our Work](#) > [Programme on Space Applications](#) > [Schedule of Activities](#) > 2016

United Nations/Nepal Workshop on the Applications of Global Navigation Satellite Systems

KATHMANDU, NEPAL, 12 - 16 DECEMBER 2016

Organized jointly by the United Nations Office for Outer Space Affairs and Survey Department of the Ministry of Land Reform and Management of Nepal

Co-organized and co-sponsored by the International Committee on Global Navigation Satellite Systems (ICG) and GfRmbH Galileo Control Centre, German Space Agency (DLR)

UPDATED INFORMATION

- [Programme](#)

Our Work

- Secretariat of COPUOS
- Programme on Space Applications
 - PSA News
 - Fellowships
 - Schedule of Activities
 - 2018
 - 2017
 - 2016**
 - 2015
 - 2014
 - 2013
 - 2012

12 – 16 DEC 2016

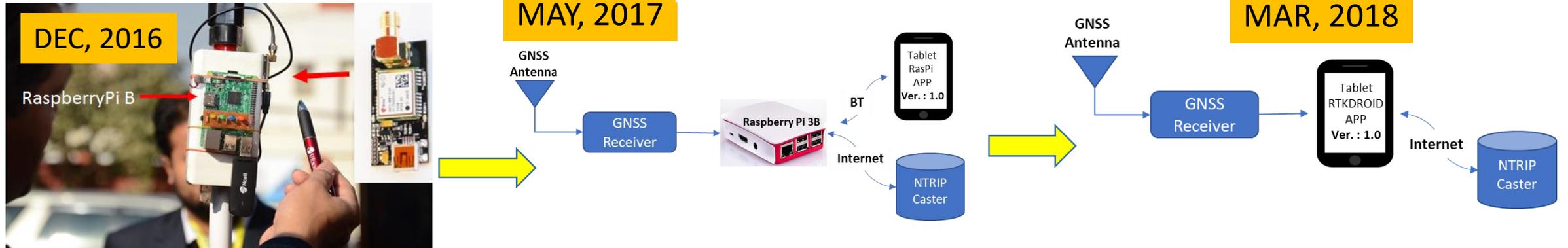
- Organized by Survey Dept. of Nepal and UNOOSA/ICG
- **Total 154 participants from 32 different countries**
- **66 International participants from 31 countries**
- 25 International participants were fully funded by ICG
- Full Five days workshop including ICG's IDM WG Meetings



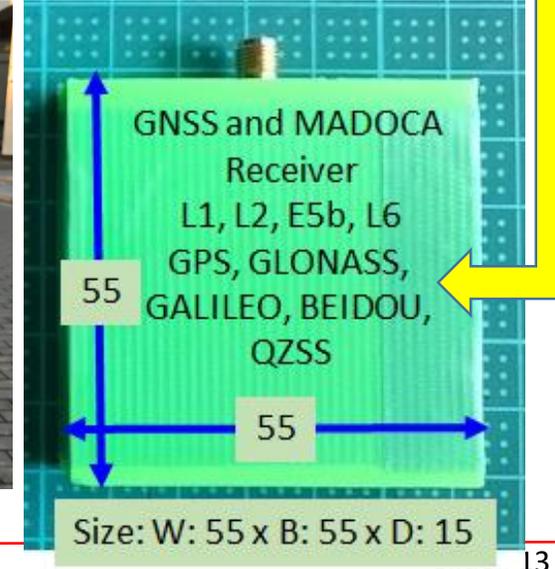
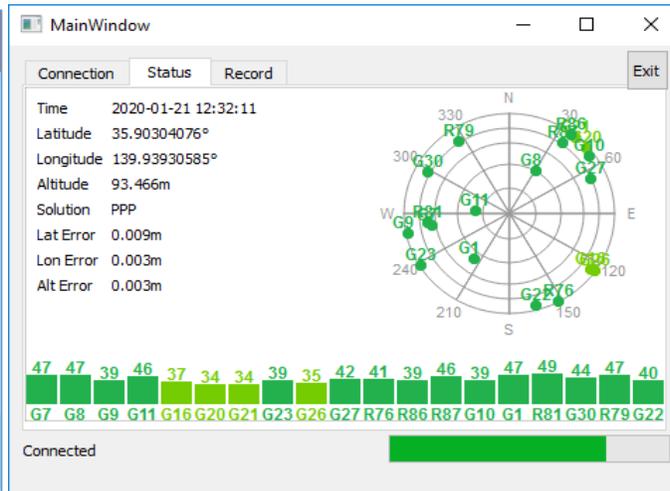
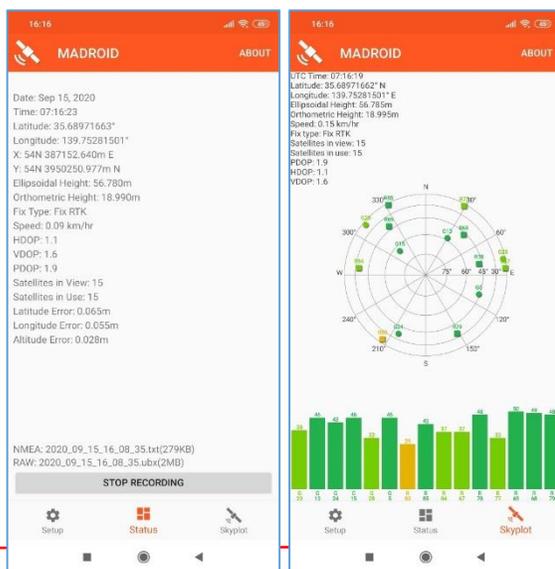
Low-Cost High-Accuracy Positioning System, Development Cycle

Goal: Cost < \$100 / Accuracy < 100cm / Weight < 100gm

Low-Cost RTK



Low-Cost MADOCA



DEC, 2019

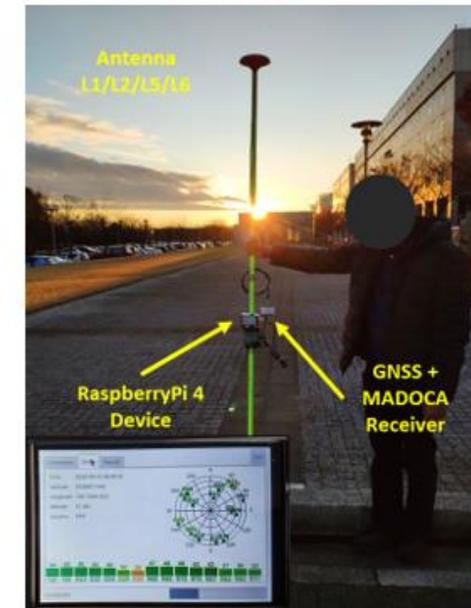
Low-Cost MADOCA Receiver System

- **Webinars and Trainings**
 - Conducted GNSS and MADOCA webinars for
 - Indonesia (about 200 participants)
 - Thailand (about 40 participants)
 - Philippines (about 40 participants)
 - Australia (about 30 participants)
 - More webinars, trainings and workshops will be conducted
- **Distribution of MADOCA Devices (HW, SW, Data)**
 - **MAD-WIN, MAD-PI and MADROID** products will be distributed to overseas universities and research organizations or Japanese companies who want to conduct joint research overseas under UTokyo's MTA (Material Transfer Agreement).
- **Field Verification Tests and Joint Research**
 - Field verification tests and joint research will be conducted overseas with universities and research organizations who will receive the devices from UTokyo.

MADOCA-PPP User's Manual

MAD-WIN, MAD- π , and MADROID

Version 1.0



Center for Spatial Information Science (CSIS)

The University of Tokyo

空間情報科学研究センター

東京大学

November 2020