



The Regional Network Office for Urban Safety (RNUS)

Monthly Report (August 2024)

Report to STE/SET

Prepared by RNUS

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1.1 Summary

This report summarizes the activities done in RNUS office during the month of August 2024. Progress has been summarized in the following orders:

- 1) RNUS Outreach Activities
- 2) Other Activities
- 3) Progress on Research Activities
 - Structural Health Monitoring with remote sensing techniques
 - Study on post-disaster recovery dynamics
 - Study on Development of Land-use Optimization tool
- 4) Plans

1.2 RNUS Outreach Activities

As part of RNUS outreach activities, the 3rd International Joint Student Seminar was held from 6 to 8 August 2024, in Milton E. Bender Jr. Auditorium (MEB), Asian Institute of Technology. It was jointly organized by OHOW (Institute of Industrial Science, University of Tokyo) and RNUS office (STE/ AIT). Total of 30 students from Asian Institute of Technology, University of Tokyo, Shibaura Institute of Technology and Hokkaido University, presented their research in oral presentation style. Prof. Pennung Warnitchai (STE, AIT), Prof. Vilas Nitivattananon (Urban, AIT), and Assistant Professor Hiroyuki Hasada (Honma Lab., UTokyo) delivered special lectures during the two-days technical session.

Four best presentation awards were given to the winners and one best discussion award was given to one student for active participation/ discussion in the seminar. The seminar could have been served as a platform for the participating students to share their research in a scholarly environment, with their students' peers and faculties.

Please see the below table for brief schedule and number of attendances for each day of seminar. Proceeding of extended abstract and final report of the seminar compiling detailed schedule, activities done and comments from the participants, is under preparation and will be uploaded in OHOW home page in coming week (report will be uploaded in this link <https://ohow.iis.u-tokyo.ac.jp/>).

Table-1. 3rd International Joint Student Seminar program and attendance number

Date and time	Activity	Total number of attendances
6 th August 2024, 9:30~16:00	Day-1: Two special lectures and 15 student's presentations	43 pax.
7 th August 2024, 9:30~16:00	Day-2: One special lecture and 15 student's presentations	56 pax.
8 th August 2024, 9:00~18:30	Day-3: Technical tour (1) Flood drainage canal of Bang Ban-Bang Sai project and construction site (2) Lunch cruise at Kankitti Restaurant, Ayutthaya (3) Chao Sam Phraya National Museum, Ayutthaya (4) Wat Yai Chaiyamongkhon, Ayutthaya (5) Ong Gaan Tolasap Night market	28 pax.

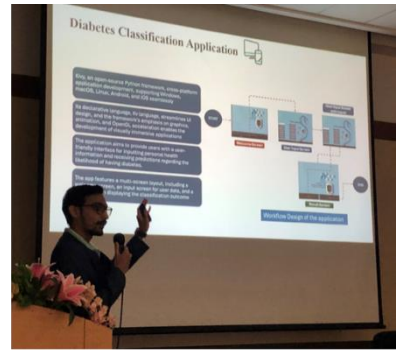


Figure-1. Technical session photos from 3rd International Joint Student Seminar

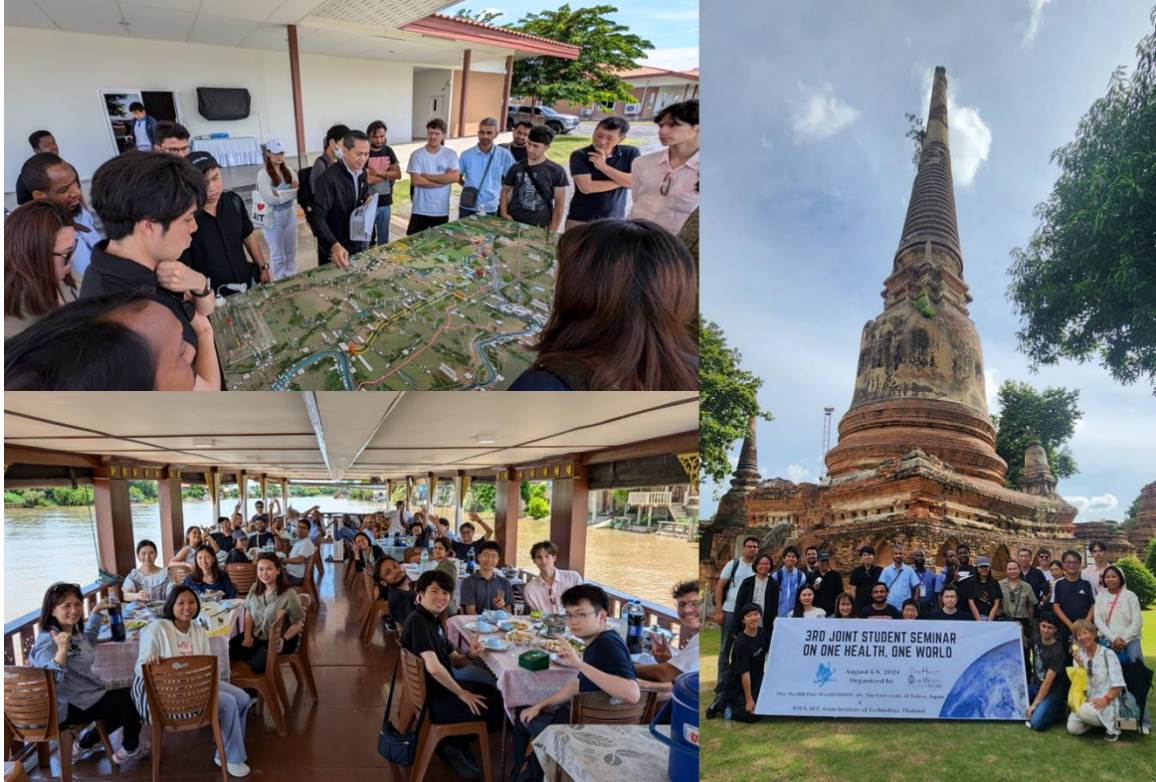


Figure-2. Technical tour group photos from 3rd International Joint Student Seminar

1.3 Other Activities

RNUS office supported in arranging Geotechnical Laboratory visit for the students from University of Tokyo, and Hokkaido University. Prof. Kuo-Chieh Chao and lab members explained the lab activities and demonstrated some experiments. This visit helped students understand the basic knowledge on ground improvement engineering.



Figure-3. Students visited to Geotechnical (GTE Lab.) in AIT

RNUS office supported in arranging Todai Alumni Seminar and Party which was held on 10th August 2024. Three keynote speakers were invited for the Seminar: Prof. Takeuchi (Remote sensing of environment and disaster, UTokyo), Dr. Nuntikorn Kitratporn (Geo-Informatics Scientist, GISTDA), and Dr. Yasmin Bhattacharya (RNUS, AIT). Around 50 alumni from different departments of UTokyo graduates joined the seminar and party.



Figure-4 Todai alumni seminar and party

1.4 Progress on Research Activities

Structural Health Monitoring with remote sensing technique is one of the ongoing research topics in RNUS office. Land subsidence analysis for Bangkok City for 9 years duration from 2016 to 2024, was processed using Interferometric Synthetic Aperture Radar (InSAR) technique. The preliminary result could describe some land subsiding area in Bangkok City as shown in figure below (red colour represents land subsiding area). Visualizing interface for land subsidence information can be accessed through this link [TSInSAR Bangkok – Overview \(arcgis.com\)](https://arcgis.com). Prof. Takeuchi and Dr. Khin visited to GISTDA office in Lak Si on 9th August 2024 for possible

collaboration in remote sensing-based structure health monitoring for Bangkok's linear infrastructure.

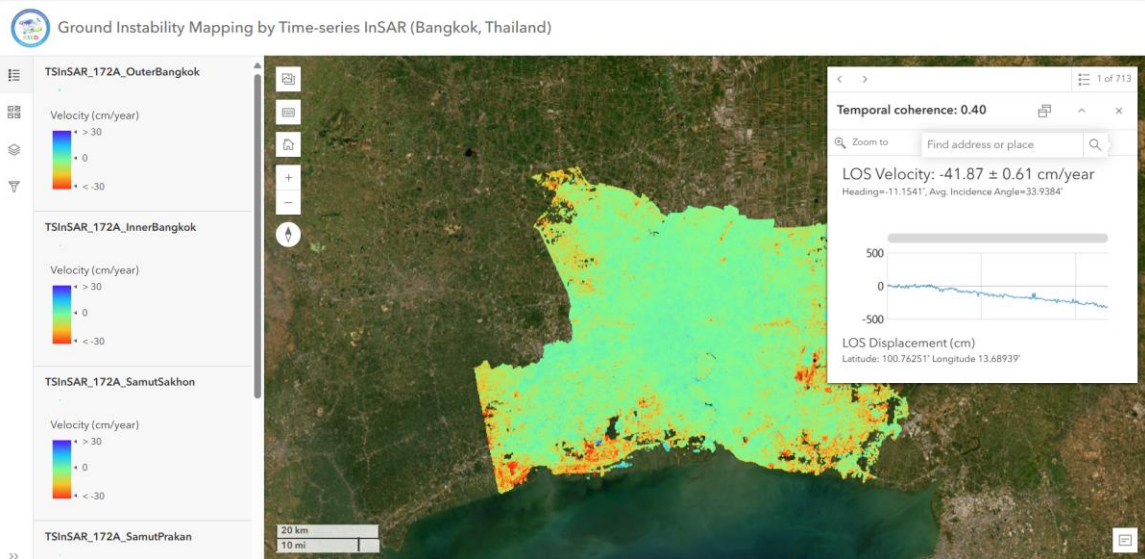
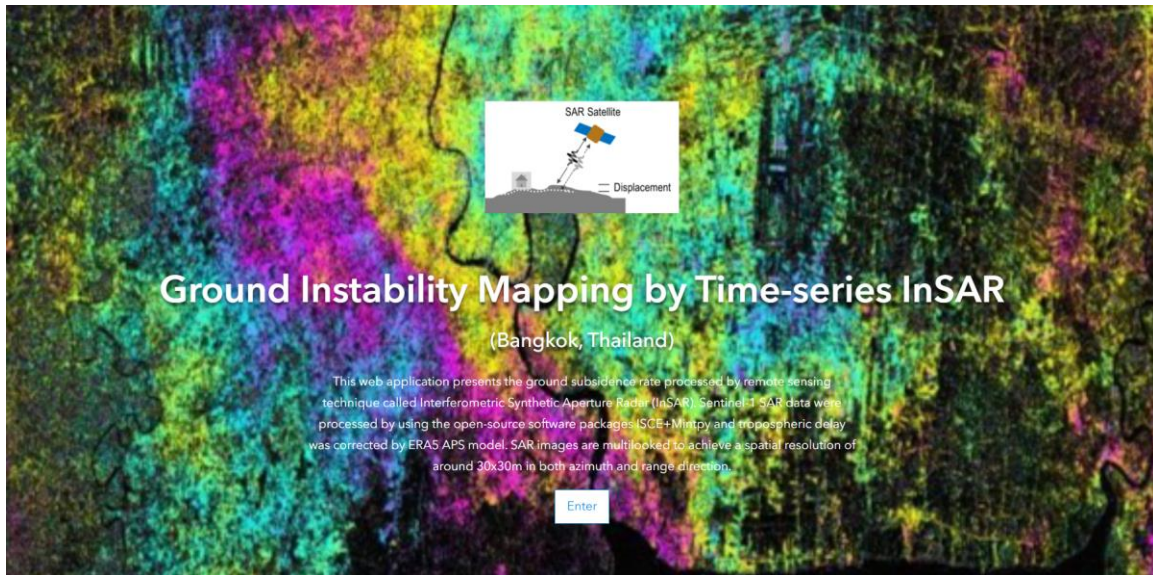


Figure-5. Visualization interface for land subsidence in Bangkok City (as of July 2024 analysis)

This technique was also applied to Chiang Mai area and the validation of result needs to be done. Progress will be reflected in coming report.

In relation to post-disaster recovery dynamics work, the JSPS bilateral project proposal with New Zealand was submitted in end of August. The project proposes to extend the ongoing work with StatsNZ by Dr. Yasmin in New Zealand in regard to 2011 Christchurch recovery and its long-term effects.

Ongoing work by Dr. Yasmin regarding the development of land use optimization tool is underway with three preliminary locations identified in Phuket for further consideration. These are: Patong

Beach, Kamala Beach, and Bang Tao Beach and their surrounding areas. Consultation with Thailand's tsunami hazard modeling team from Mahidol University and STE is underway to understand the tsunami risk of the region and evaluate the 2030 Urban Planning Master Plan for Phuket.

Current student assistantship status for projects supervised by Dr. Yasmin:

Assistantship Topic	Activities	Hours worked in August	
		No. of student	hours worked
Optimization tool development	Programming	1	30 hrs (August)

1.5 Plans

It is planned to bring D-RTK 2 (High Precision GNSS Mobile Station) from W.Takeuchi lab (UTokyo) to RNUS office in September 2014. This mobile station will be used in LiDAR drone flying for accurate positioning measurement.

Discussion with RIMES for fine resolution DEM development for small case study area in Ayutthaya is ongoing and waiting contacts from them.

Dr. Yasmin will be out of office September 9-13 to attend the International Symposium on Architectural Interchanges in Asia (ISAIA) in Kyoto, Japan.

Dr. Khin will be out of RNUS office from 29th September~6th October 2024 (tentatively) for field visit to Noto earthquake damaged area to conduct recovery analysis by remote sensing technique.