The Regional Network Office for Urban Safety (RNUS)

Monthly Report

(January & February 2024)

Report to STE/SET

Prepared by RNUS

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Contents

1.1 Summary

This report is intended to summarize the activities of the Regional Network Office for Urban Safety-RNUS not only in academic research but also in outreach activities. It is planned to do remote sensing research related to water use efficiency AWD technique, structural health monitoring, post-disaster recovery and urban related research.

Some of the candidate topics are as follows and will be implemented based on discussion with STE/SET host professors.

(1) Investigating failure causes of Ayuttaya small bridge after its collapse in 2023 and assessing current embankment condition using remote sensing technique

(2) Structural health assessment of transport infrastructure by Interferometric Synthetic Aperture Radar InSAR technique (Case study Yangon-Mandalay Highway after Oct 2023 Bago flood)

(3) Study on post-disaster recovery dynamics. (TBC by Dr. Yasmin)

(4) Evacuation modeling and land-use planning for tsunami prone regions (TBC by Dr. Yasmin).

1.2 LiDAR Drone Procurement

LiDAR drone DJI Zenmuse L1 was procured in RNUS office to do LiDAR measurement in validation of remote sensing techniques (see LiDAR drone DJI Zenmuse L1 photo below). Drone usage training from manufacturer was conducted last year, 21 Dec 2023. Some interested participants from RS/GIS and STE joined that training.

Fig-1 DJI LiDAR Drone Zenmuse L1 Training on 21st Dec 2023

1.3 Water Level Sensor Installation in Nakhon Pathom

Two Rynan water level sensors were installed inside RID paddy field in Nakhon Pathom on 23rd Jan 2024. Sensors will be used for validation of water use efficiency research for AWD technique (Alternate Wetting and Drying). Previously two Farmo sensors were already installed last year August 2023. A total of 4 devices were already installed inside RID paddy fields.

Location of RID paddy field: Irrigation Water Management Experiment Station 5 (MaeklongYai), Rural Rd นฐ 3020, Thung Khwang, Kamphaeng Saen District, Nakhon Pathom 73140, Thailand

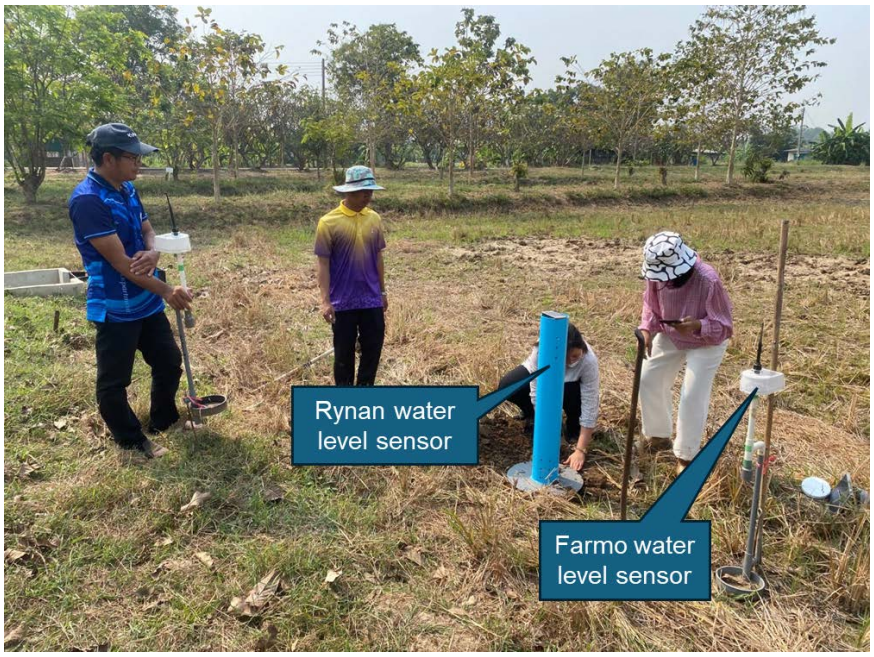

Fig-2 Water Level Sensors Installation on 23rd Jan 2024

1.4 Plans

It’s planned to do LiDAR drone flying over RID paddy field once a week for topography mapping and rice plant growth monitoring. Drone flying is scheduled to be starting from mid-March till end of harvesting season in May/June.

Discussion with RIMES team about flood early warning research is ongoing. There’s a possibility that RNUS can provide remote sensing input in the RIMES project.

RNUS webpage is upgrading with the support from Mr. Makoto Kuno (Technical Staff, Kuwano Lab, IIS, UTokyo).