5th Weekly Report

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To: include all managers
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From: GO duck

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1 Summary

- Been developing a few testing scenarios, taking specific locations and their limitation into consideration.
- Have conducted mock field testing for goTenna Pro X and Meshtastic T-Beam in the said scenarios.
- Been revising the introduction and related work chapters. Working on methodology part.

2 What GO duck completed this week

- Team:
  - Have set up test scenarios in which the devices could be of use without the traditional communications infrastructure. The considered locations so far are: open fields, underground tunnels, inside buildings and rooftops of parking garages.

  - Went out for the testing in different places. Went to the lake to find out the maximum communication range for goTenna. Moreover, tested goTenna and Meshtastic in the tunnels and got some useful datasets.

- Gwangyeok Kim:
  - Soldered OLED screen to T-Beam board. The screen provides intuitive interface showing GPS

location, connectivity of mesh network and node information.

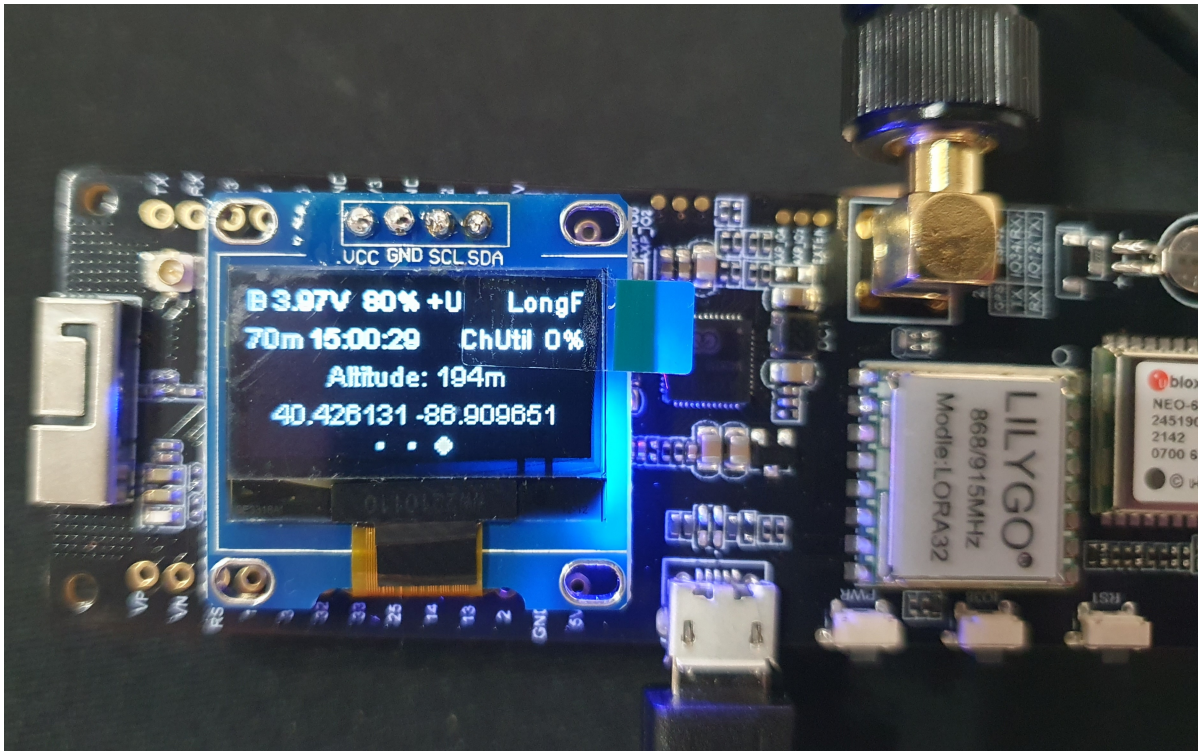

Figure 1: OLED screen attached to T-Beam board

- Looked for documentations related to the project, found 3 papers for the reference.
- Been revising the paper for smoother flow overall, writing a draft for the methodology chapter.
- Extracted serial debugging logs from Mesthastic boards for data collection, using PuTTY.

- Keonwoo Lim:
  - Looked through google map to find test spots.
  - Wrote simple test scenarios. However, we had to change it for many times.

- Sujee Noh:
  - Analyzed Meshtastic log for information gathering
  - Conducted sample testing to check the limit of the devices
  - Replaced ClusterDuck part in the paper to Meshtastic

- Younguk Maeng:
  - Comprehended and calculated Fresnel zone for tests.
  - Analyzed goTenna log to find out what information is available for tests.
  - Wrote simple test scenarios based on the methodology.
  - Conducted simple tests to check the communication between devices.

3 Things to do by next week

- To write about Meshtastic in the paper and revise the introduction following the feedback.
- To complete abstract, related work and methodology sections in the paper. Plan to send the paper for another feedback before Friday.
- To finish our experiment and collect some useful datasets such as RSSI, packet delivered time, distance, battery power, and location.

4 Problems or challenges

- The goTenna Pro application for an iOS device provides detailed logs, while the android counterpart does not. There is a disparity in data collection between the two, therefore the placement of each node connected to the iOS devices needs to be planned with careful consideration.
- The datasets from both goTenna and Meshtastic devices are rather redundant. Need to extract necessary information only, and it may require preprocessing.