3rd Weekly Report

Report Date: 01/27/2023

To: include all managers
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From: GO duck

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1 Summary

- Set up a local PaPi on 23rd. Does not fully operate yet, unsure of its importance at the moment.

- Received new boards: LILYGO ESP32 TTGO T-Beam v1.1. Tested a simple text communication between newly configured two Mamaducks on 24th.

- Received the equipment (Four goTenna Pro Xs) on 26th, tested their functionalities. One appears to be faulty, as it failed to send or receive signals at all.

- Sent the first draft for feedback.

2 What GO duck completed this week

- Gwangyeok Kim:
  - Mamaducks with LILYGO ESP32 TTGO T-Beam v1.1:
  The board outperforms the previous configuration even with a relatively smaller antenna due to a built in GPS module. The new configuration is much more compact, and comes with a battery input enhancing its portability even further.
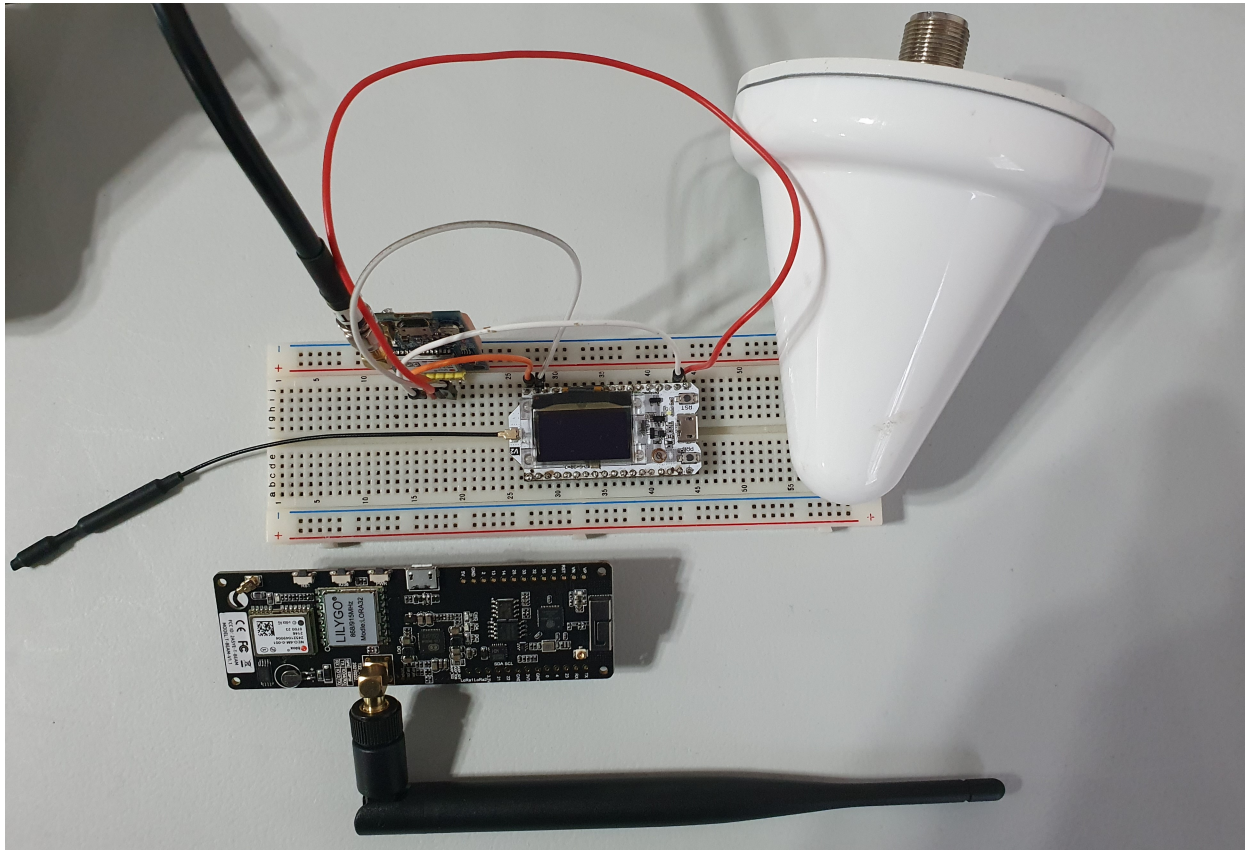
Figure 1: Comparison between two different configurations

- The PaPi and DMS LITE is a collaborative effort to collect all the data from a ClusterDuck Protocol network locally. It provides a local interface to see network activity and data traffic. The PaPi stores data and acts as a local MQTT broker to communicate with the PapaDuck. The setup procedure is explained in the Project-Owl's github. [1] The necessary docker containers are all running on a local Raspberry Pi server, and the main interface is accessible via localhost:3000. The core data management page, however, is not available. Not planning on pursuing the culprit, as unsure of its role in the upcoming field tests at the moment.

- Explored features and functions of the goTenna device: Pro X. The in-app diagnostic logs and spectrum analyzer appears to provide adequately detailed information.

- Revised the first two paragraphs of the draft. Had little time available to do more than that.

- Keonwoo Lim:
  - Made a title for paper.
  - Revised Sujee's first introduction draft. Added some more information about off-grid communication, goTenna and ClusterDuck.

- Sujee Noh:
  - Started to write related work section.
  - Test goTenna Pro X private chat and broadcast chat.

- Younguk Maeng:
  - Summarized related work that have been found.
  - Installed and set up RaspAp to turn Raspberry Pi into an access point.
  - Tried to build own Raspberry Pi local server.
  - Read goTenna Pro X user guide and tested the communication between the equipment.

3   Things to do by next week

- To decide the location for our experiment. Since the weather goes below zero, testing outside for a long time might be tough.

- To determine methods for evaluating the performance of goTenna and ClusterDuck. Once figured out, to start writing on the paper.

- To configure ClusterDuck devices for ease of data collection.

- To prepare for the upcoming mid presentation.

4   Problems or challenges

- The available work hours have been largely impacted by Covid and mandatory side activities. Did need to make extra efforts outside of office hours.

- The overall project flow still is rather stagnant, efficient workload management required.

References

[1] [online] Available: https://github.com/Project-Owl/dms-lite-docker/.