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From: BEST (Beacon-based Evacuation System and Technology)

Bacon Beacon

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Summary

Finishing the paper until chapter two was the prime goal of this week. The Paper has already received feedback and has been modified to have a nice flow. Each team member studied papers to write related topics. Roles & Responsibilities were changed after the presentation feedback. Now the team has been separated into an algorithm team and an experiment team. Aiming to concentrate on the experiment in order to collect data.

What “BEST” completed this week

- Finish paper till chapter two
 - A seminar related to our topic was held and discussed our team’s novelty.
 - Re-assemble all the paragraphs so it can have better flow.
- Roles & Responsibilities revised
 - Now the team has been divided into an algorithm and experiment team. When the algorithm team designs the algorithm, the experiment team will conduct experiments.
 - To understand our topic better, all the members are going to write papers, no excuses..

Things to do by next week

- Get AP’s RSSI threshold
 - The experiment will be conducted to get AP’s RSSI values by distance[1].
- Trilateration Experiment
 - The experiment will be conducted by two Feasybeacon and the access point.
 - Collect the RSSI of the beacons and utilize two beacons with the strongest signal[2].
 - By Applying trilateration, the user’s accurate coordinates can be obtained.
- Request for the blueprint of the K-SW building

- The blueprint of the building will be converted into a 2-dimensional graph for the path planning algorithm[3].
- A blueprint is necessary to compare the actual location and the beacon's estimated location but we still do not have it.

Problems or challenges:

- Preparing for the new way to trilateration
 - We still only have two beacons. AP will be used as the main beacon for the entire room. In order to use AP like that, the RSSI value has to be inspected[1].
- Modifying the paper
 - To improve the flow of the paper, the entire structure of the paper was changed and made it clear to understand.

References

- [1] R. Liu, Z. Yin, W. Jiang, and T. He, "WiBeacon," *Proceedings of the 27th Annual International Conference on Mobile Computing and Networking*, Sep. 2021, doi: 10.1145/3447993.3448615.
- [2] C. Zhou, J. Yuan, H. Liu, and J. Qiu, "Bluetooth Indoor Positioning Based on RSSI and Kalman Filter," *Wireless Personal Communications*, vol. 96, no. 3, pp. 4115–4130, Jul. 2017, doi: 10.1007/s11277-017-4371-4.
- [3] U. Atila, Y. Ortakci, K. Ozacar, E. Demiral, and I. Karas, "SmartEscape: A Mobile Smart Individual Fire Evacuation System Based on 3D Spatial Model," *ISPRS International Journal of Geo-Information*, vol. 7, no. 6, p. 223, Jun. 2018, doi: 10.3390/ijgi7060223.