Design Progress Report 2

Team 14

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STVATA001 (ECE) Stavrev, Nasko

SCHBEN011 (Mech) Scholtz, Benjamin

(All present.)

Meeting Details

The meeting was arranged via our Whatsapp group as usual. We arranged to meet in Blue Lab at 8AM on Thursday the 10th of March. We unfortunately had to abandon our previous idea of using RFID's after feedback from the course convener. The decision was taken during the meeting on Thursday after a brief discussion.

We managed to come up with a new idea after some brainstorming. The idea was presented by Benjamin Sholtz.

We also allocated tasks to each group member to work on individually.

Idea Formulation

-Make use a travel triangulation Open RTLS system using Decawave chips.

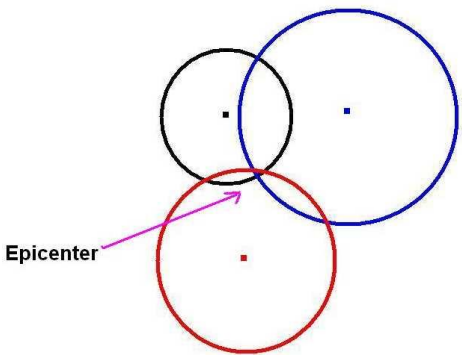
-Cheaper than RFID. We decided to make RFID our second option.

-Cheaper in terms of the readers needed for RFID, difficulty of installing coils and the tags are nearly on par with RFID in terms of expenses.

-Each bay would be set up using three chips to achieve triangulation.

-Each driver would receive small device to triangulate with the chips – possible problem with determine how big the device should be (small ones easier to lose?)

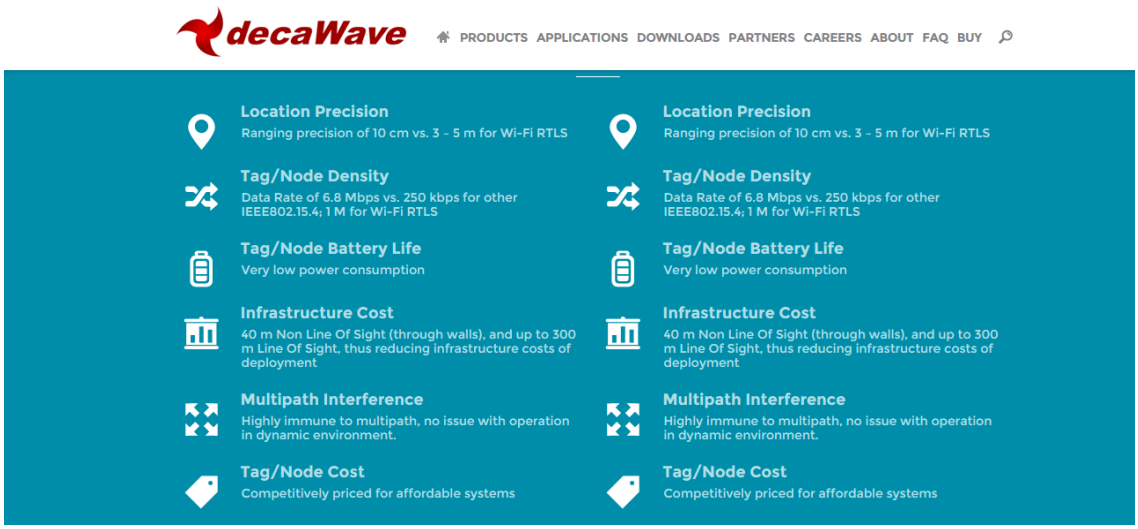
-Triangulation works as demonstrated below:



The intersection of the circle would be used for detection.

-Decawave chosen because of familiarity of use with group members.

- As per official website stats are displayed below:



-All circuit diagrams, schematics, data regarding the chips are easily available from the website after registering.

-Our backup idea is RFID.

Allocation of Tasks

Allocation of tasks was decided by program of study of each group member.

Tag case - CAD - Isaac

Tag electronics/PCB - Ben
-chip connections, programming

Tag power electronics - Jarushen
-battery requirements, regulator, lifetime

Beacon construction - sketch - Isaac

Beacon electronics/PCB (WiFi) - block diagram

Report/LaTex - Ben

Software backend + simulation – Nasko

What we need:

Find out about visitors/how to fix system for their use

Decide on beacon size

Possible issue with people who don’t buy tags at all using parking