



Dwight Look College of
ENGINEERING
TEXAS A&M UNIVERSITY

Team 05: Smart Luggage

Bi-Weekly Update 1

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Sponsor: Prof. Stavros Kalafatis

TA: Eric Robles

Project Summary

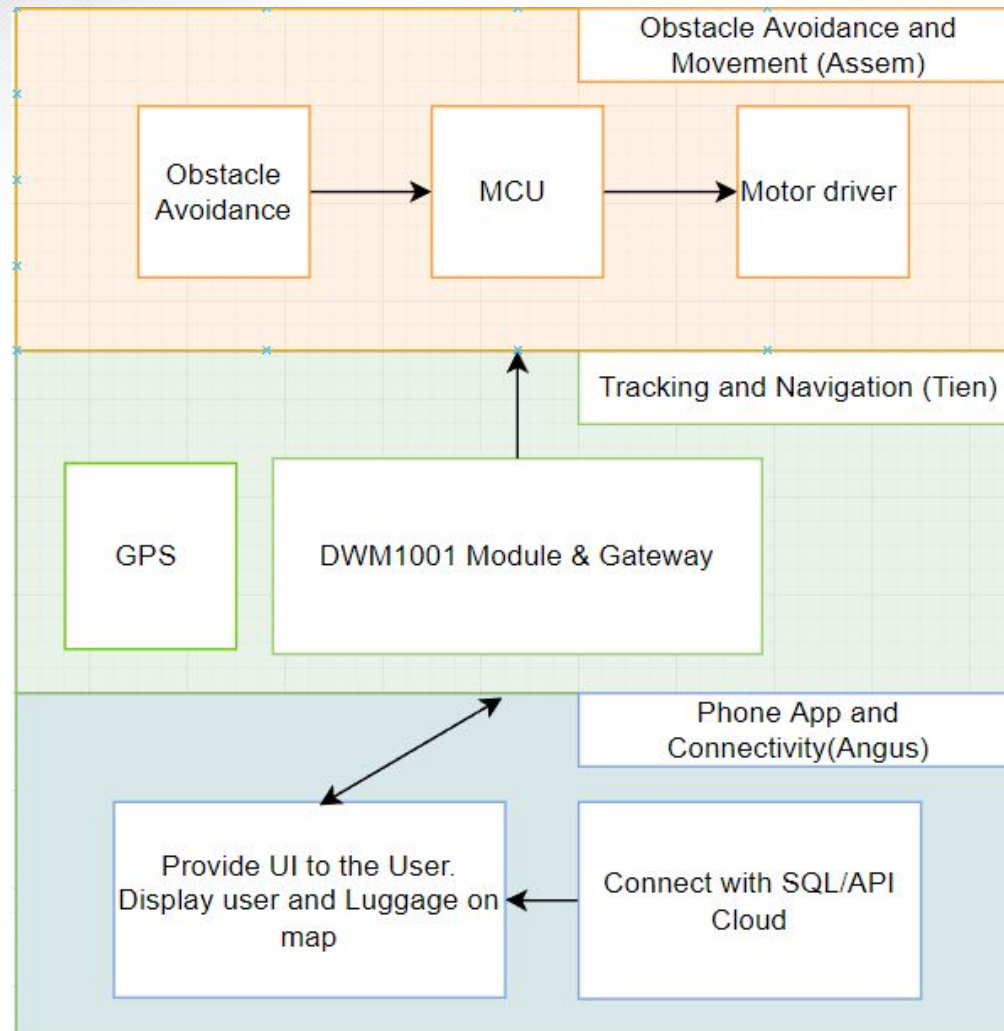
Problem statement:

- Luggage can be a challenge for elderly and disabled people due to the luggage weight.
- Luggage are subject to theft or loss.

Smart Luggage will:

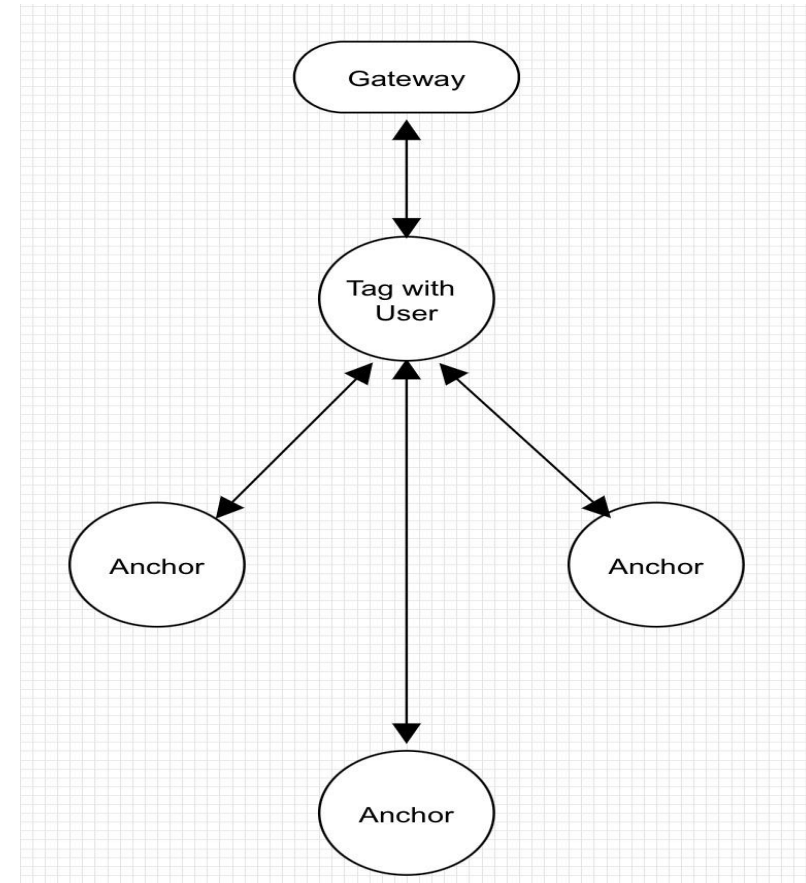
- Follow the user and alert them if the luggage is out of range.
- Avoid Obstacles.
- Allow the user to locate their luggage in the event of theft or loss using a phone application.

Project/Subsystem Overview



Major Project Changes for 404 (45 seconds)

- Tracking & Navigation
 - Using DWM1001-Dev.
 - 3 anchor modules as the receiver.
 - A tag as the Transmitter and the Gateway as a Collector.



Project Timeline

Completed

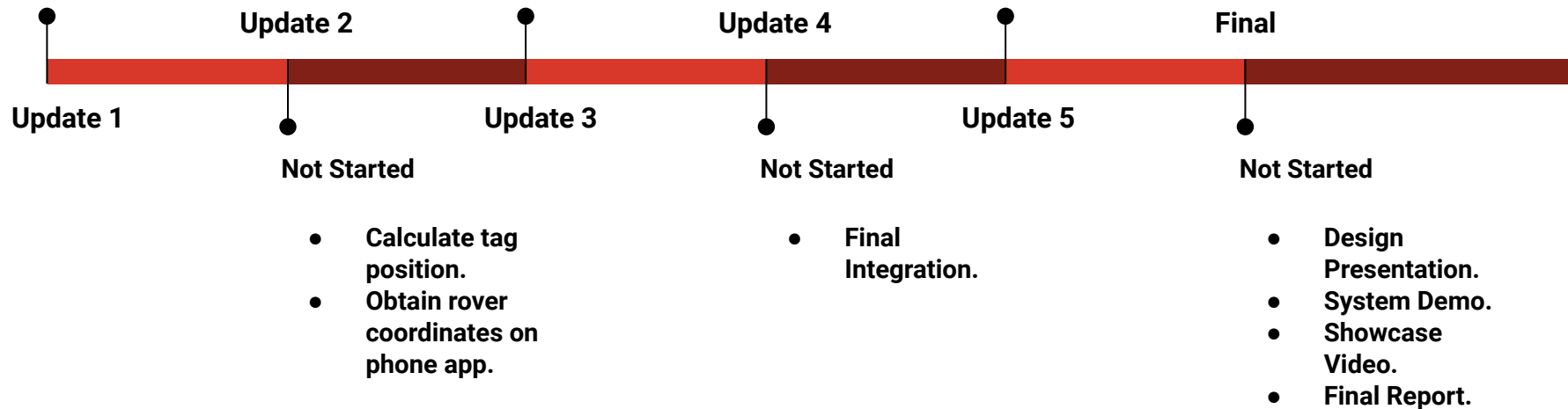
- Movement and Obstacle avoidance 80% complete.
- Phone App 85% complete.
- Tracking and navigation 75% complete.

Not Started

- Command rover based on (x,y) values.
- Transfer tag position.
- Update rover location on phone app.

Not Started

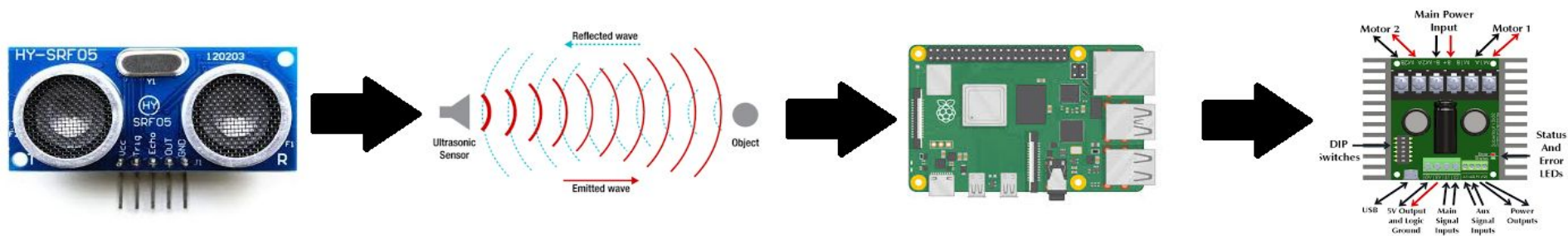
- System Validation.



Movement and Obstacle Avoidance

Assem Abdelkhalek

Accomplishments since 403 0 hrs of effort	Ongoing progress/problems and plans until the next presentation
N/A	<ul style="list-style-type: none"> Integrating IMU unit with my subsystem to measure the distance and rotational angle of the rover. Writing the code the receives the (x, y) coordinates from the tracking subsystem.

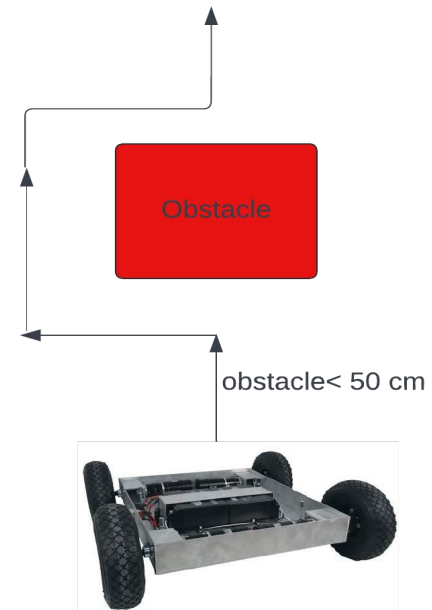


Movement and Obstacle Avoidance

Assem Abdelkhalek

403 Accomplishments:

- Configured motor driver with Raspberry Pi.
- Created and tested python library for the motor driver for movement control.
- Configured and tested ultrasonic sensors with Raspberry Pi to get the correct distances.
- Created a top module for obstacle avoidance testing.





Phone App

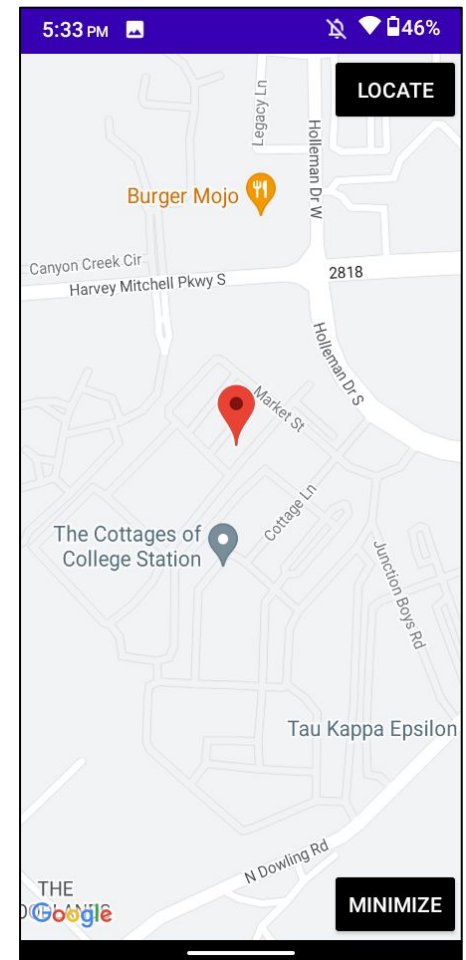
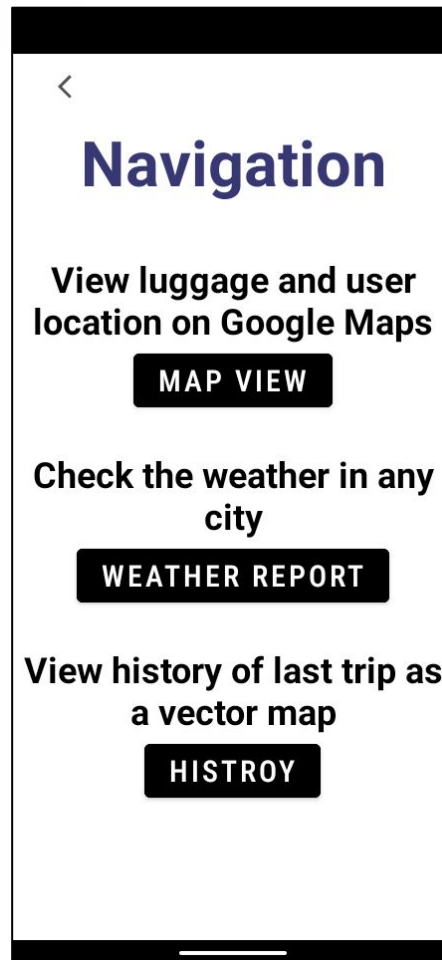
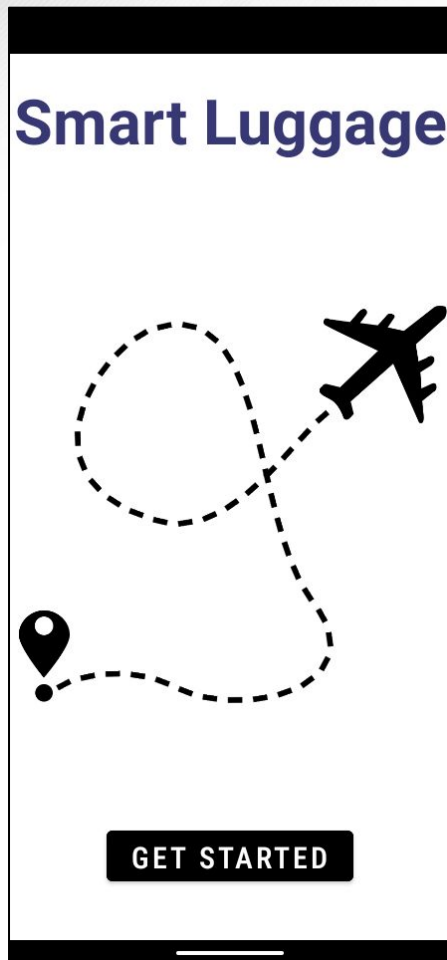
Angus Mckellar

Accomplishments since 403 16 hrs of effort	Ongoing progress/problems and plans until the next presentation
<ul style="list-style-type: none">• Remodeled app for efficiency and cleaner user interface.• Weather portion of the app accurately displays current weather of inputted city.	<ul style="list-style-type: none">• Display route the user took on a map using a vector line.



Phone App

Angus Mckellar





Phone App

Angus Mckellar

Choose a City

State is optional but may be required
to get specific city

SUBMIT

Weather Report

Houston
TX, US

89F

Broken clouds

Precipitation
0.0mm

UV index
1.92

Feels Like
98.9F

Humidity
62.0%



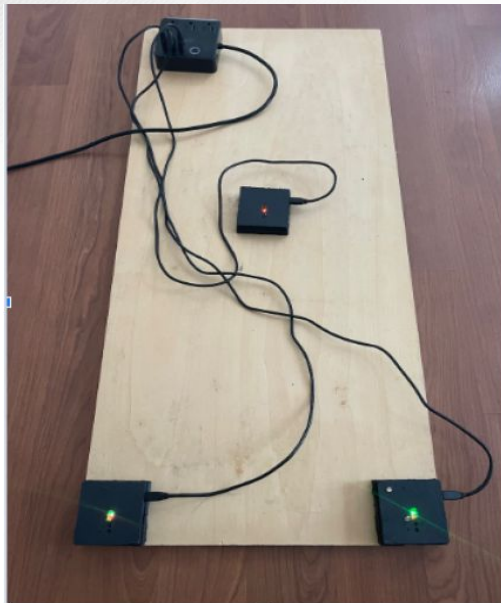
Tracking and Navigation

Tien Le

Accomplishments since 403	Ongoing progress/problems and plans until the next presentation
<ul style="list-style-type: none">• Finished setting the hardware with anchors, tag & gateway.• Collecting and calculating the distance between the tag to each anchors and tag position as x, y coordinate.	<ul style="list-style-type: none">• Begin to send Tag location to Movement system and Phone App.

Tracking and Navigation

Tien Le



3 Anchors



1 Tag



Gateway



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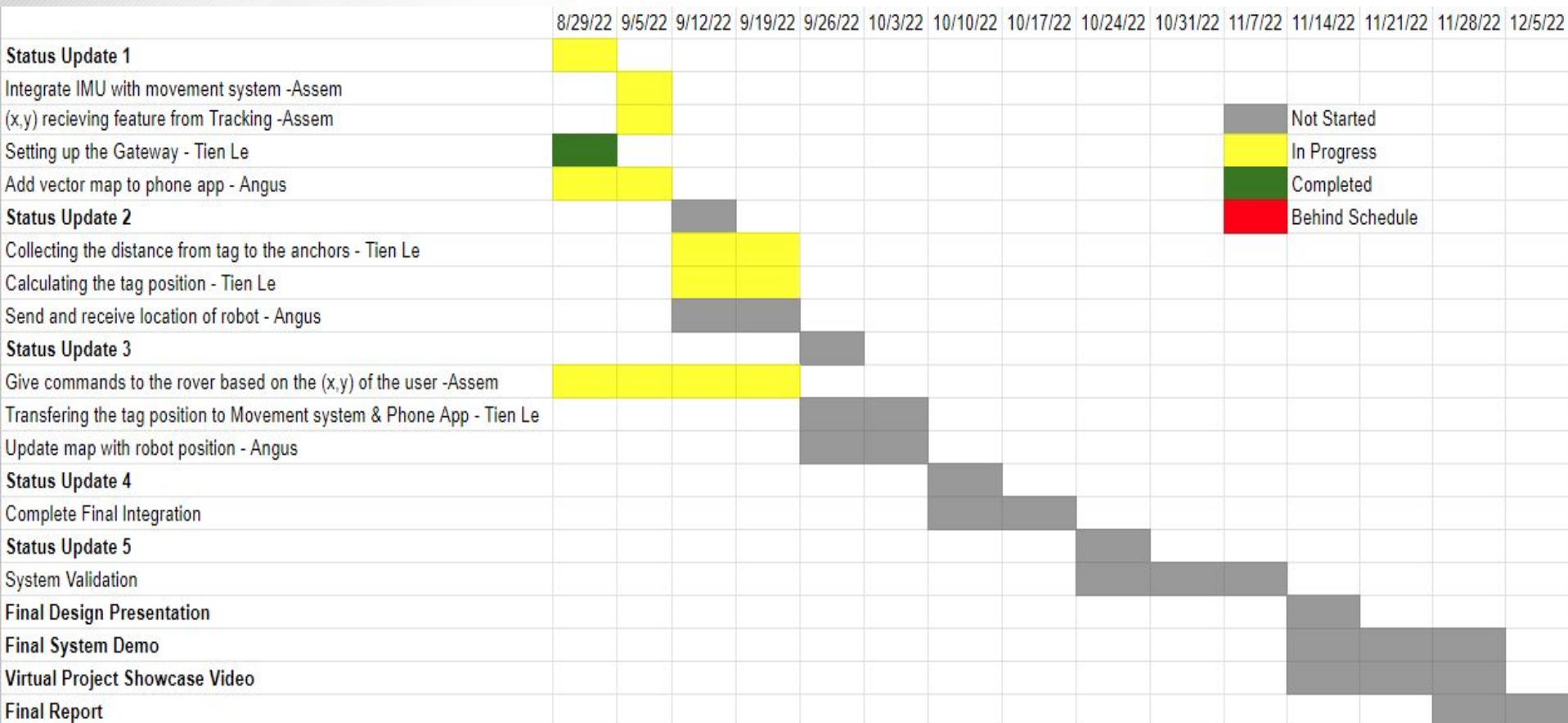
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Parts Ordering Status

Part Description	Status (order approved/order placed/part received)



Execution & Plan





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Thank You