

# Team 05: Smart Luggage Bi-Weekly Update 1

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# **Project Summary**

#### Problem statement:

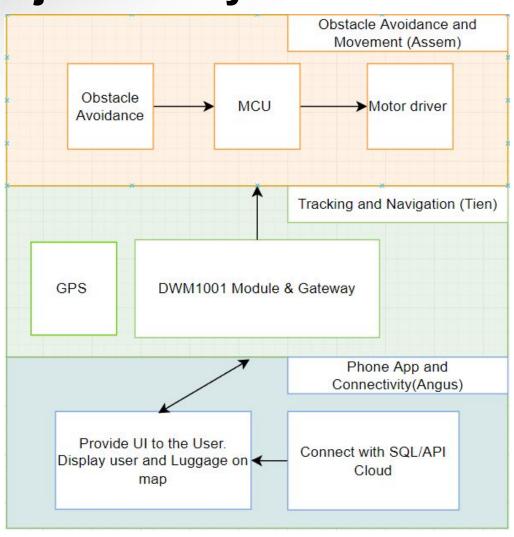
- Luggage can be a challenge for elderly and disabled people due to the luggage weight.
- Luggage are subject to theft or loss.

#### 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**

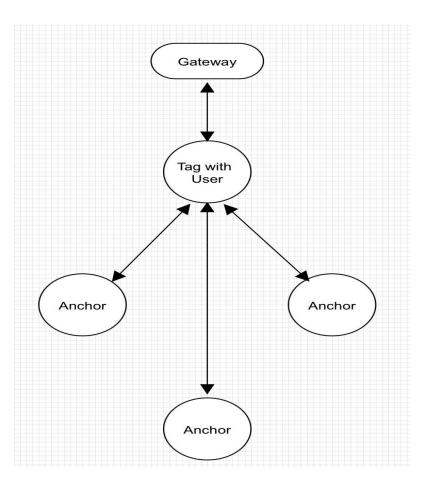




## Major Project Changes for 404 (45 seconds)

- 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**

**Update 5** 

 System Validation.



- Calculate tag position.
- Obtain rover coordinates on phone app.

Final

Integration.

**Not Started** 

**Update 4** 

Design
 Presentation.

**Not Started** 

**Final** 

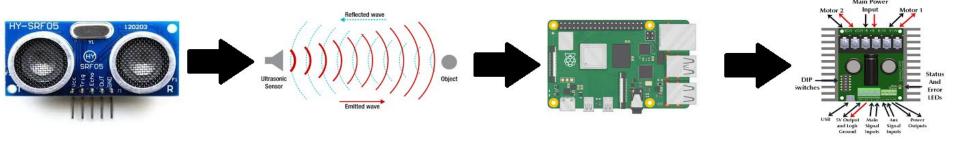
- System Demo.
- Showcase
   Video.
- Final Report.



### **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> <li>Integrating IMU unit with my subsystem to measure the distance and rotational angle of the rover.</li> <li>Writing the code the receives the (x, y) coordinates from the tracking subsystem.</li> </ul>



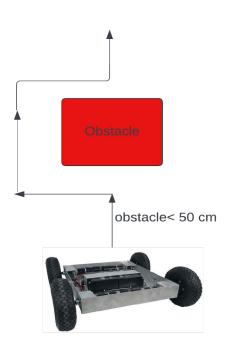


#### **Movement and Obstacle Avoidance**

#### **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**

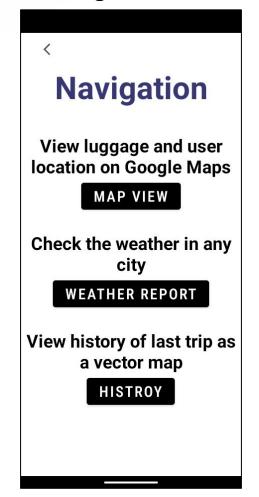
Accomplishments since 403 16 hrs of effort	Ongoing progress/problems and plans until the next presentation							
<ul> <li>Remodeled app for efficiency and cleaner user interface.</li> <li>Weather portion of the app accurately displays current weather of inputed city.</li> </ul>	Display route the user took on a map using a vector line.							

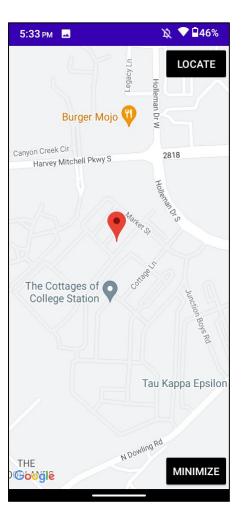


# **Smart Luggage GET STARTED**

# **Phone App**

**Angus Mckellar** 



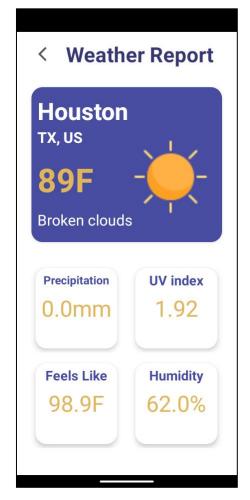




# **Phone App**

#### **Angus Mckellar**







# **Tracking and Navigation**

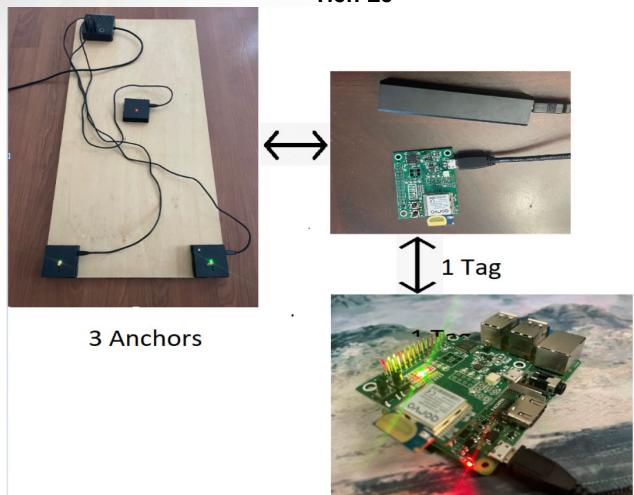
#### Tien Le

Accomplishments since 403	Ongoing progress/problems and plans until the next presentation								
<ul> <li>Finished setting the hardware with anchors, tag &amp; gateway.</li> <li>Collecting and calculating the distance between the tag to each anchors and tag position as x, y coordinate.</li> </ul>	Begin to send Tag location to Movement system and Phone App.								



# **Tracking and Navigation**

Tien Le



Gateway



# **Parts Ordering Status**

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



# **Execution & Plan**

	8/29/22	9/5/22	9/12/22	9/19/22	9/26/22	10/3/22	10/10/22	10/17/22	10/24/22	10/31/22	11/7/22	11/14/22	11/21/22	11/28/22	12/5/22
Status Update 1															
Integrate IMU with movement system -Assem															
(x,y) recieving feature from Tracking -Assem												Not Start	ed		
Setting up the Gateway - Tien Le												In Progre	SS		
Add vector map to phone app - Angus												Complete	ed		
Status Update 2												Behind S	chedule		
Collecting the distance from tag to the anchors - Tien Le															
Calculating the tag position - Tien Le															
Send and receive location of robot - Angus															
Status Update 3															
Give commands to the rover based on the (x,y) of the user -Assem															
Transfering the tag position to Movement system & Phone App - Tien Le															
Update map with robot position - Angus															
Status Update 4															
Complete Final Integration															
Status Update 5															
System Validation															
Final Design Presentation															
Final System Demo															
Virtual Project Showcase Video															
Final Report															



# **Thank You**