

19WSD001 Team Project – E.A.R.T.H

Objectives/ Aim (What?)

Aim: Accurately identify and sort rubbish from a beach, leaving it in a higher standard than when arriving.

Current Objectives

- Grabbing trash
- Sorting trash
- Intelligent path planning

Stakeholders (Who?)

- The company staff, shareholders, suppliers, etc
- System operators
- People on the beach
- Wildlife on the beach
- Beach Management
- Recycling businesses

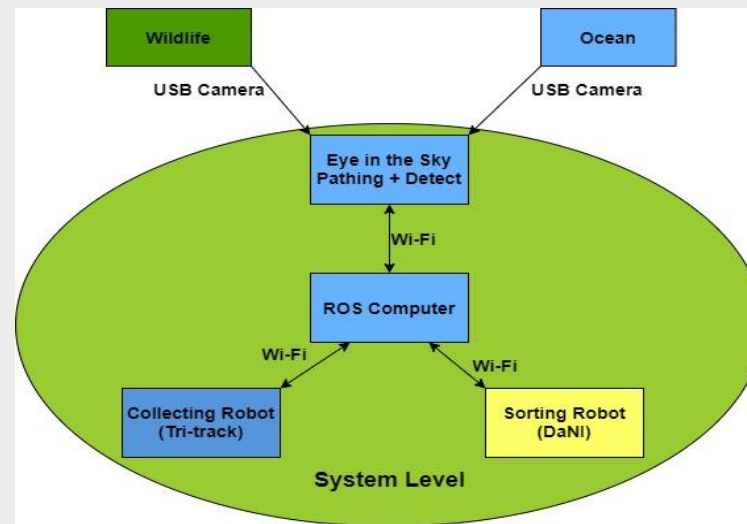
Strategy/ Plan (Why?)

- Consult with PST on major steps involving trash pick up when sorting
- Capitalize on reduced contact time between before Semester 2 starts
- Integrate different implemented modules of the system using ROS
- Minimize unnecessary complexity to the system while maintaining robustness

Currently working on: Finishing and integrating systems
Target: [Level 3 – Conditional Automation](#)

Activities (How)

Actions	State
Independent control of robot vehicles via Xbox Controller	
Sorting – Object recognition	
Sorting – Grabbing object	
Sorting – Bin detection	
Sorting – Placing in appropriate bin	
Integration between systems using ROS	
Pathing – map of environment	
Pathing – decision of route to follow	
Wildlife detection – Crabs	
Wildlife detection – Seagulls	
Telemetry – UI Design	
Telemetry – Data acquisition	
Telemetry – Camera feed	



Budget statement

- Remaining Budget: £ 131.92
- Spent: £ 68.08
- Budget Plan please see link: <https://bit.ly/2ZYQfXB>

Mission phase completion

Phase	Completion
Enter and navigate the beach area using intelligent route finding	
Identify recycling bins from optically coded sensors (at least 3 different types)	
Identify and sort different types of rubbish	
Identify and characterize different crab types and the routes taken	
Actively avoid interfering with the crabs	
Identify and alert operators about other wildlife	
Identify waterline and actively avoid or mitigate against the incoming tide	

Key issues and risks

- Grabbing objects and placing them in appropriate bin
- Unsure how waterline will be shown on the ground
- Integration
- Hardware failure as viva approaches

Team information

E.A.R.T.H

Github:

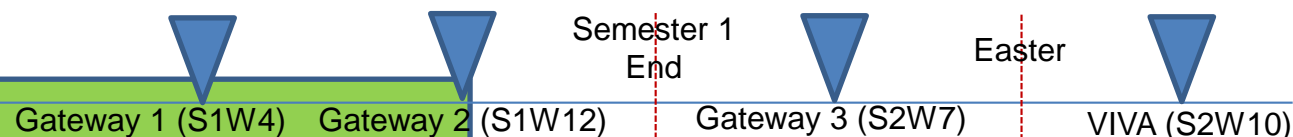
<https://github.com/orgs/lboroWMEME-19WSD001/teams/e-a-r-t-h>

E-portfolio:

<https://teamearth1.wordpress.com/>



Programme



Key

Key

Completed

In progress

Not Started