

Unit of Study	COMP3888
Team name	COMP3888_T15A_Group1
Project Name	Optimal Path for Drone Delivery
Project start date	Monday, 14/09/2020
Project end date	Sunday, 27/11/2020
Project point person	Nicholas Hui
Report Date	26/9/2020

Quick description	Path finding algorithm, implement battery, charger station randomization algorithm development and implementation.
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Status item	Status up to last week	Planned for next week
Scope	<p>Selected fixed world.</p> <p>Inserting charging stations in the world.</p> <p>Implementing path algorithms in the selected world.</p> <p>Algorithm accommodating extended distances due to object collision.</p>	<p>Implement a spawning algorithm for spawning of charging stations in the world.</p> <p>Scripting for spawning algorithm to SDF files for Gazebo.</p> <p>Adding a battery failsafe to the drone.</p>
Time	The team is on schedule to finish the features needed for the presentation and demo next week, but there may be difficulties in integrating each team member's parts.	
Quality	High quality deliverables that achieves the client's needs and also with necessary documentation	
Planned Activities		<p>Able to model buildings and environments</p> <p>Simple randomization algorithm development</p>
Achievements	Generation of random coordinates within a circle given a radius and centre point and general mapping of these coordinates with an ascii map using a developed command line utility.	
Major deliverables	<p>Python program to generate coordinates and alter a given world map to include specified objects at these coordinates (i.e. spawning charging stations).</p> <p>Python script to automate the navigation of the drone for the delivery.</p>	<p>Refined python program to generate charging stations at the maximum possible radius of the drone and not on top of other objects (i.e. implementing objection detection to allow for regeneration of objects at a new location).</p> <p>Navigation script updated to have drone land at each waypoint</p>

	Updated algorithm to take battery usage into account.	
Major issues	Lack of general battery deterioration formula	
Major risks	Time management - need to allocate time more wisely and do proper research into resources currently available beforehand.	
External dependencies	NIL	NIL
Estimated effort (h)	12hr/person	15hr/person
Recorded effort (h)	16hr/person (on average)	
Overall Status (RYG)	GREEN	