

Design Requirements		
Date	12/6/2017	
Design Project Title:	Deliveroid	
Team Name:	Spaceship Builders	
Team Advisor	Dr. Charles Kim	
Team Assistant	Derrick Anang	
Project's Long Term Goal	To develop a robot that can pick up and deliver materials floor by floor	
Project's 2017-2018 Academic Year Goal	To develop an autonomous robot able to transfer items from source to destination in a workplace.	
Team Members (design class)	Conrad Blash; Jonathan Goberdhan; Shelton Allen	
Team Members (others)		
Requirements	Descriptions	Source
Background (NEED)	Safe autonomous transfer/exchange important documents and other items between staff/departments to reduce time of transfer	
Objective (Problem)	Create an autonomous robot to transfer/exchange of documents and other items between departments in the workplace	
Performance	1. move at a rate of 4mph, 2. Support up to 20 pounds of package load; 3. Minimum runtime of 25 minutes; Delivery time of less than 1 minute	
Ease of Use	Input of delivery details should take no more than 1 minute	
Cost	Each complete autonomous robot must cost less than \$300 to build	Pricing of similar products
Safety	Deliveroid stops within 0.5 meters of a person/obstacle; Red emergency manual override button directly on top	
Compliance	1. Federal Communication Commission (FCC) Part 15 for radio frequency devices 2. International Organization for Standardization (ISO) 13849-1 Safety of machinery -- Safety-related parts of control systems 3. International Electrotechnical Commission (IEC) 61000-4-2 Electrostatic Discharge Immunity Test	
Size	Deliveroid must have a length, width and height less than 2ft	
Weight	Deliveroid bot must weigh less than 25 pounds; Total weight allowed must be 45 pounds or less. Deliveroid must not exceed 50 pounds at any time	
Noise Level	Less than -45dB	
Load Capacity	Up to 25 pounds of package weight	

Deliverables	<ol style="list-style-type: none">1. Robotic frame2. Executable code3. Web interface for delivery input	
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