DISARM Project Plan
Second Semester
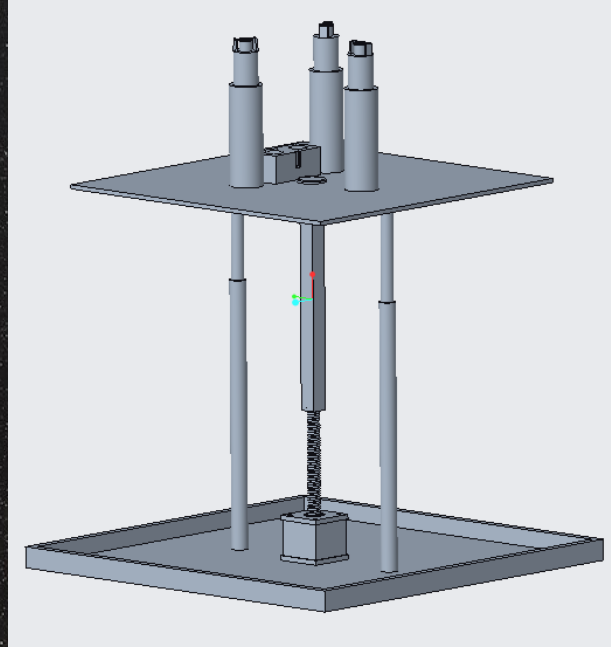
Debris **I**n **S**pace **A**utonomous **R**emoval **M**echanism

1/20/2020

Content

What is DISARM?

Model of the DISARM design.

Control Flow
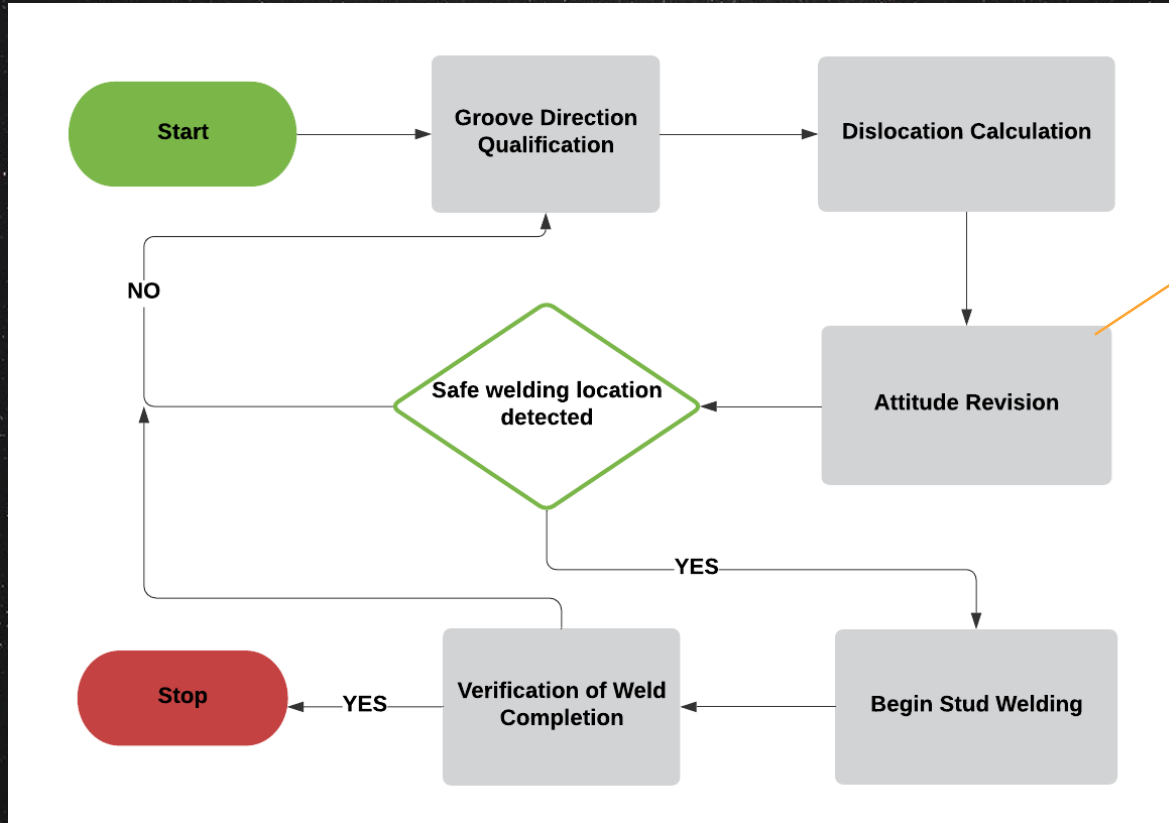
Sensor and Arduino Connection

Item	Arduino DUE	LIDAR-Lite v4 LED	V Max
1	5V	1 (5V)	5 V
2	GND	2 (GND)	--
3	SDA 20	3 (SDA)	3.3 V
4	SCL 21	4 (SCL)	3.3 V
5	PWM 3	6 (GPIOB)	3.3 V
6	PWM 2	5 (GPIOA)	3.3 V
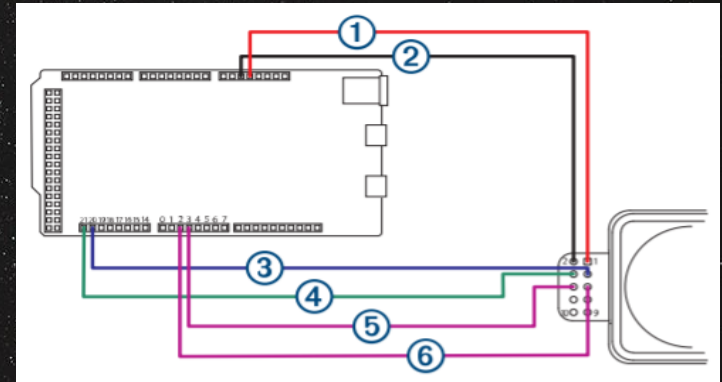
Progress Summary

Task	Progress	To do
Design CubeSat test cases	100%	none
Program sensor plugin	50%	Add Lidar-Lite LED V4 features to plugin
Design and implement autonomous algorithm	50%	Finish the previous step to continue algorithm
Develop demo video of simulation	10%	Record video demonstrating capture of debris
Implement DISARM control to work with Arduino	20%	Properly wire sensor and linear actuator

Milestone 4

- Complete simulation requirements
- Finish developing distance sensor
- Implement algorithm for locating welding points.

- Develop a demo where we test the algorithm through the simulation and observe as data is collected.
- Once simulation requirements are completed test simulation using the 1U, 6U, and 27U CubeSat models.
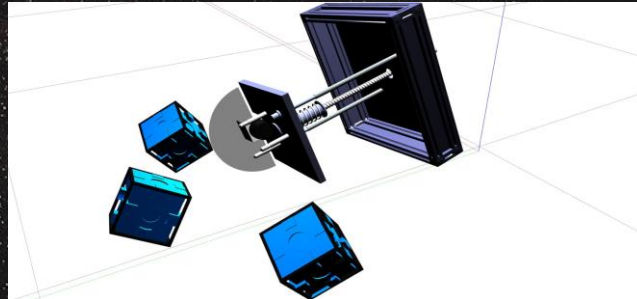
Milestone 5

- Correctly wire Arduino to Lidar-Lite LED V4 Sensor
  - Implement code to ensure correct communication between sensor and Arduino for collecting data.
  - Test sensor to its distance limit to make sure sensor is working properly beforehand and that the connection to the Arduino does not fry the device.
  - Convert Lidar-Lite analog output to digital output.

- Transfer designed algorithm code to work in conjunction with Arduino, debugging errors along the way.

- Create poster for senior design show case.

Milestone 6

- Wire linear actuator motor to the control flow system.
  - Implement code of linear actuator to work with Arduino and sensor.
- Test/demo of the entire wired system working together.
- Evaluation results
- Create user/developer manual
- Create finalized demo video

THANK YOU!

Any Questions?

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