NASA Robotic Mining

Milestone Six Progress Evaluation

Members:

Taylor Ertrachter - tertrachter2017@my.fit.edu

Bailey Hamant - bhamant2017@my.fit.edu

James Spies - jspies2017@my.fit.edu

Faculty Advisor:

Dr. Marius Silaghi - msilaghi@fit.edu

Current Progress Matrix

Task	Completion %	James	Bailey	Taylor	To do
1. Investigate tools	100%	33%	33%	33%	none
2. Hello World demos	100%	33%	33%	33%	none
3. Implement, test & demo *Make robot manually controllable*	100%	20%	20%	40%	Lead screw movement
4. Implement, test & demo *Take accurate measurements with camera*	90%	30%	30%	30%	Depth measurement

01

Task One
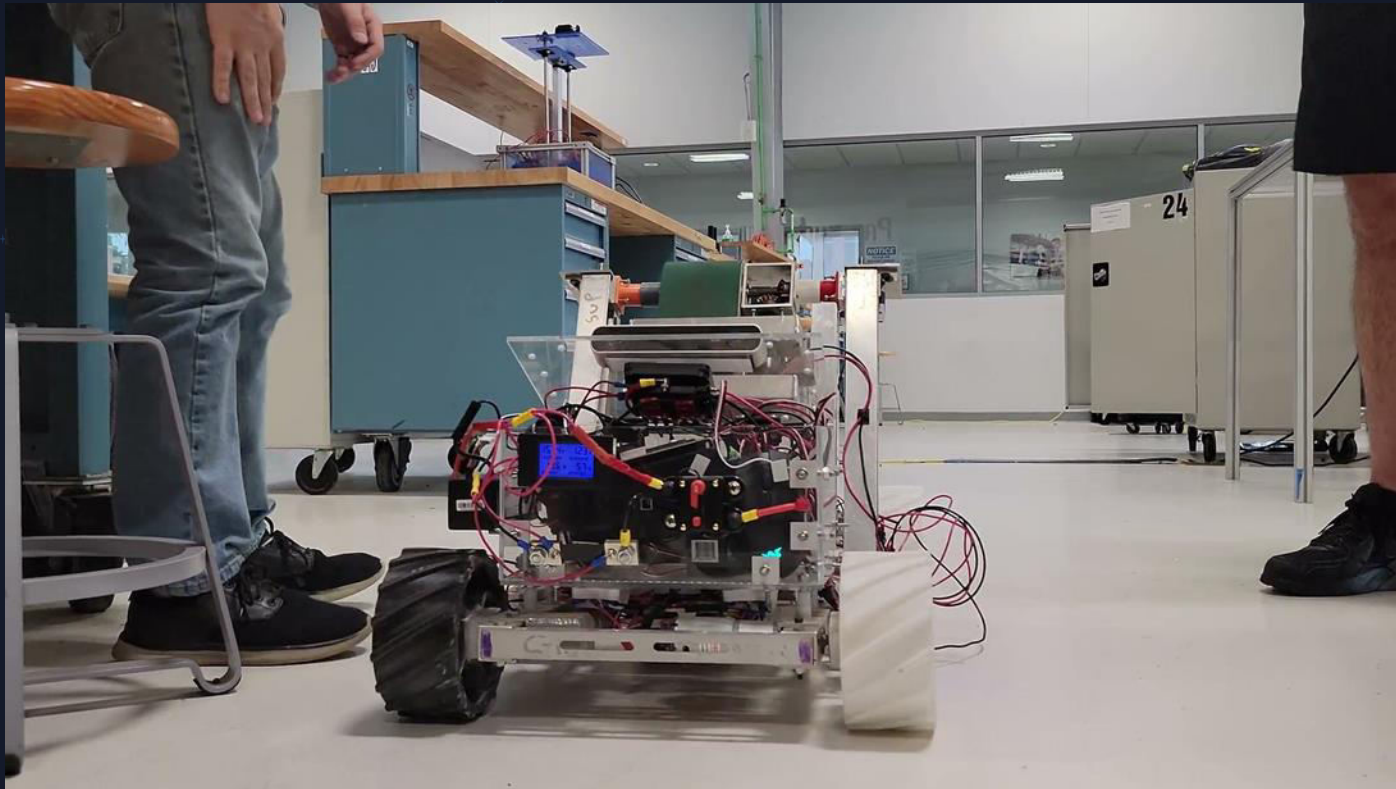
Make Robot Manually
Controllable

Make Robot Manually Controllable

- Robot can be operated via a bluetooth Xbox controller

- Can be moved forward and backward and it's bucket ladder rotated

- Wheels are moved by setting the rotation angle and adjusting the rotation speed

Make Robot Manually Controllable

- Contrasting rotation angles are set to the front left and back right wheels for left turning, and the front right and back left wheels for right turning

- There are a total of four motors on the robot which we've written control code for:
  - One controls the left side wheels (front and back)
  - One controls the right side wheels
  - One controls the bucket ladder
  - One controls the up and down movement of the lead screws

Make Robot Manually Controllable

Make Robot Manually Controllable
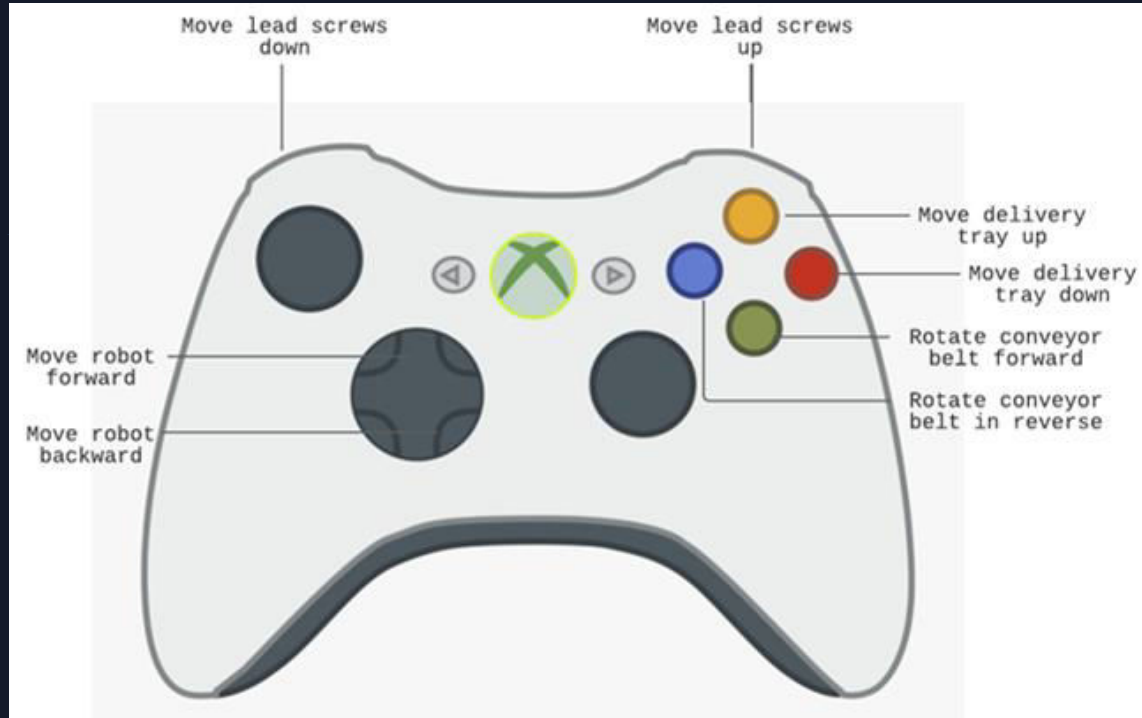
02

Task Two

Take Accurate
Measurements with ZED
Camera

Take Accurate Measurements with Camera

- Currently takes accurate measurements of distance
  - Most important perception for autonomous movement and mining

- Would be ideal to include other perceptions such as width, height, and depth

- The focus of this milestone was on getting manual control
  - Would be useful for future teams working toward full autonomy

Thanks!