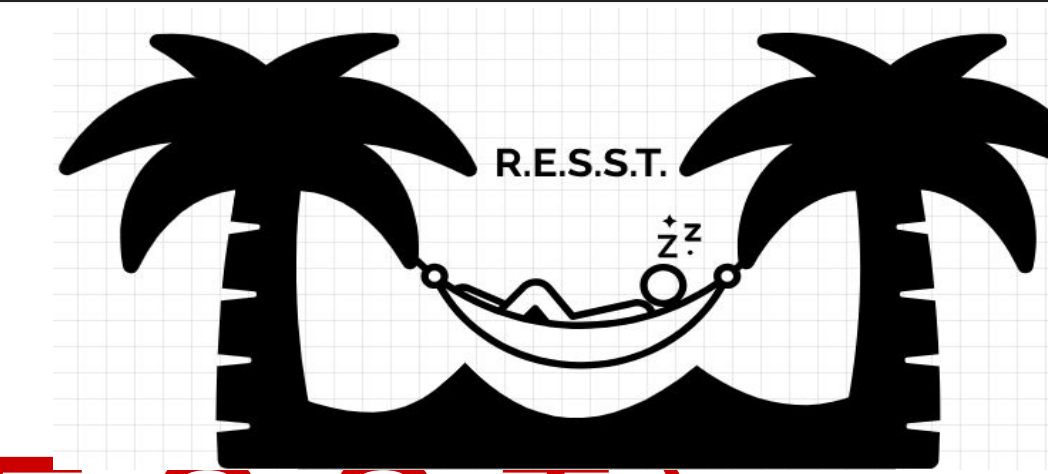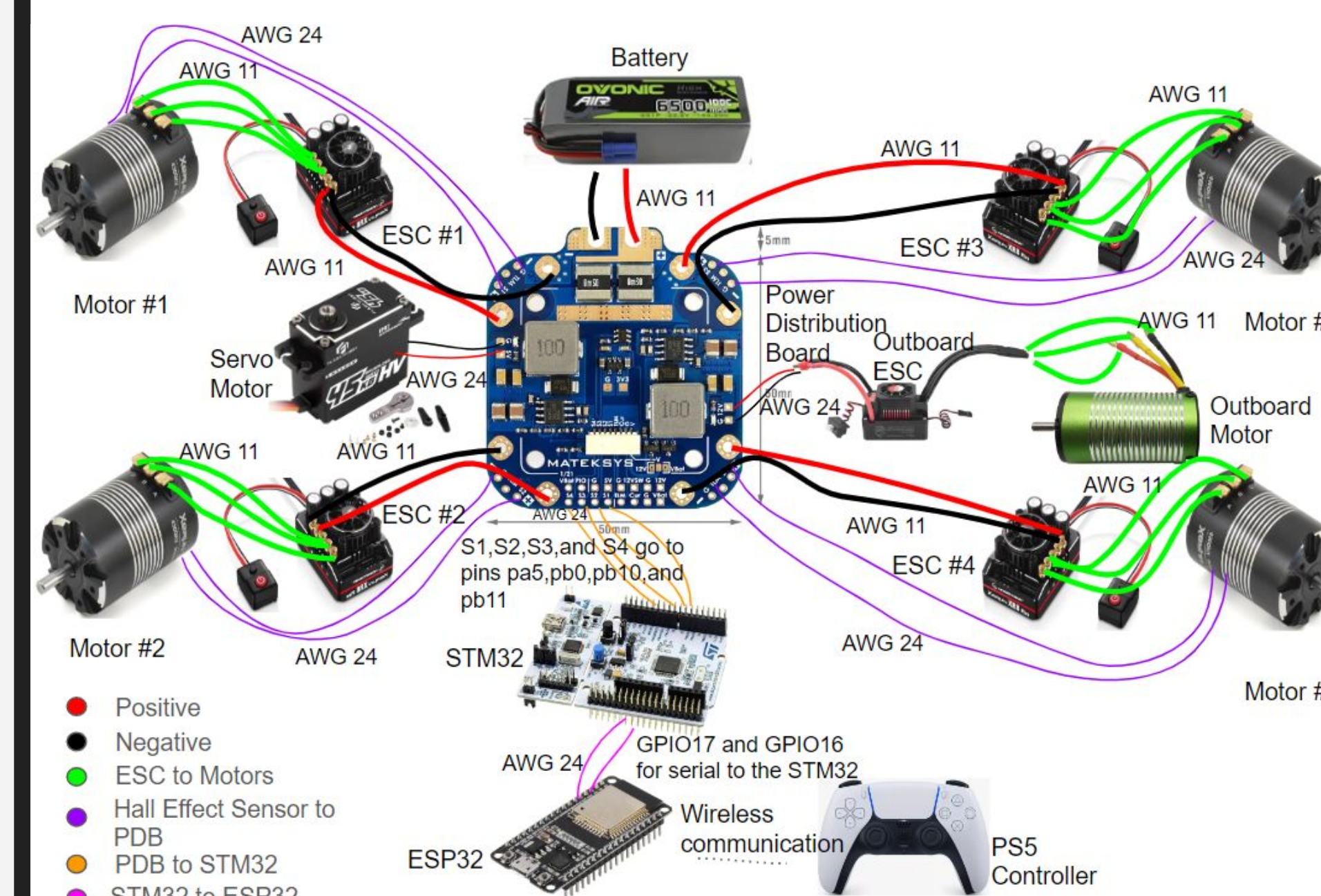# Multi-Domain Vehicle
Remote Earth Sea Systems Technologies (R.E.S.S.T.)
Sponsored by: Systems Engineering Research Center, Stevens Institute of Technology
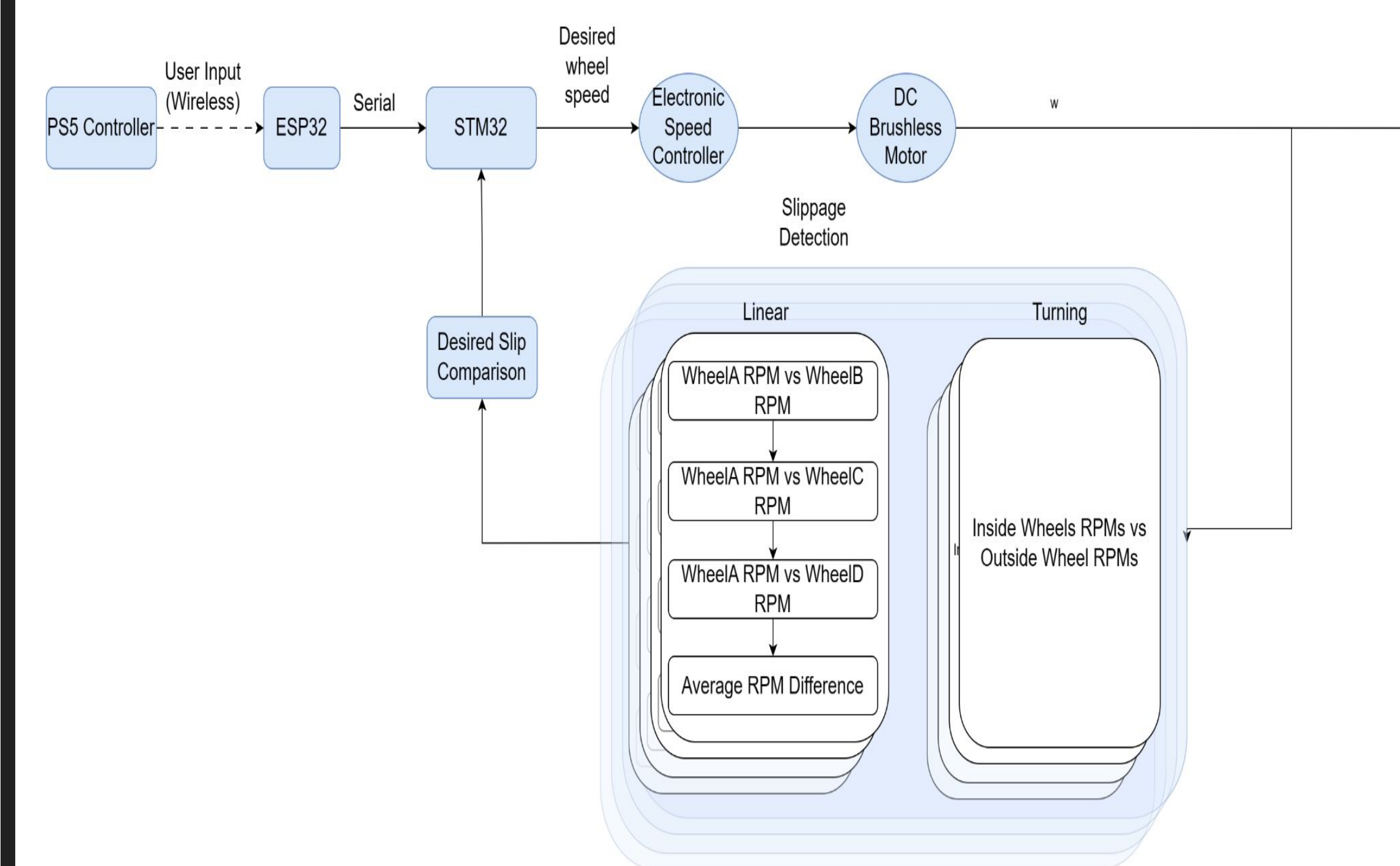
Project Overview:

Team Remote Earth Sea System Technologies has been tasked with developing a remotely controlled multi domain amphibious vehicle (MDV) that will transport military special operators across sea, surf, and land terrains. The team designed a full scale and rc scale vehicle with advanced three position extendable suspension and traction control systems to successfully navigate the transition between sea and land.
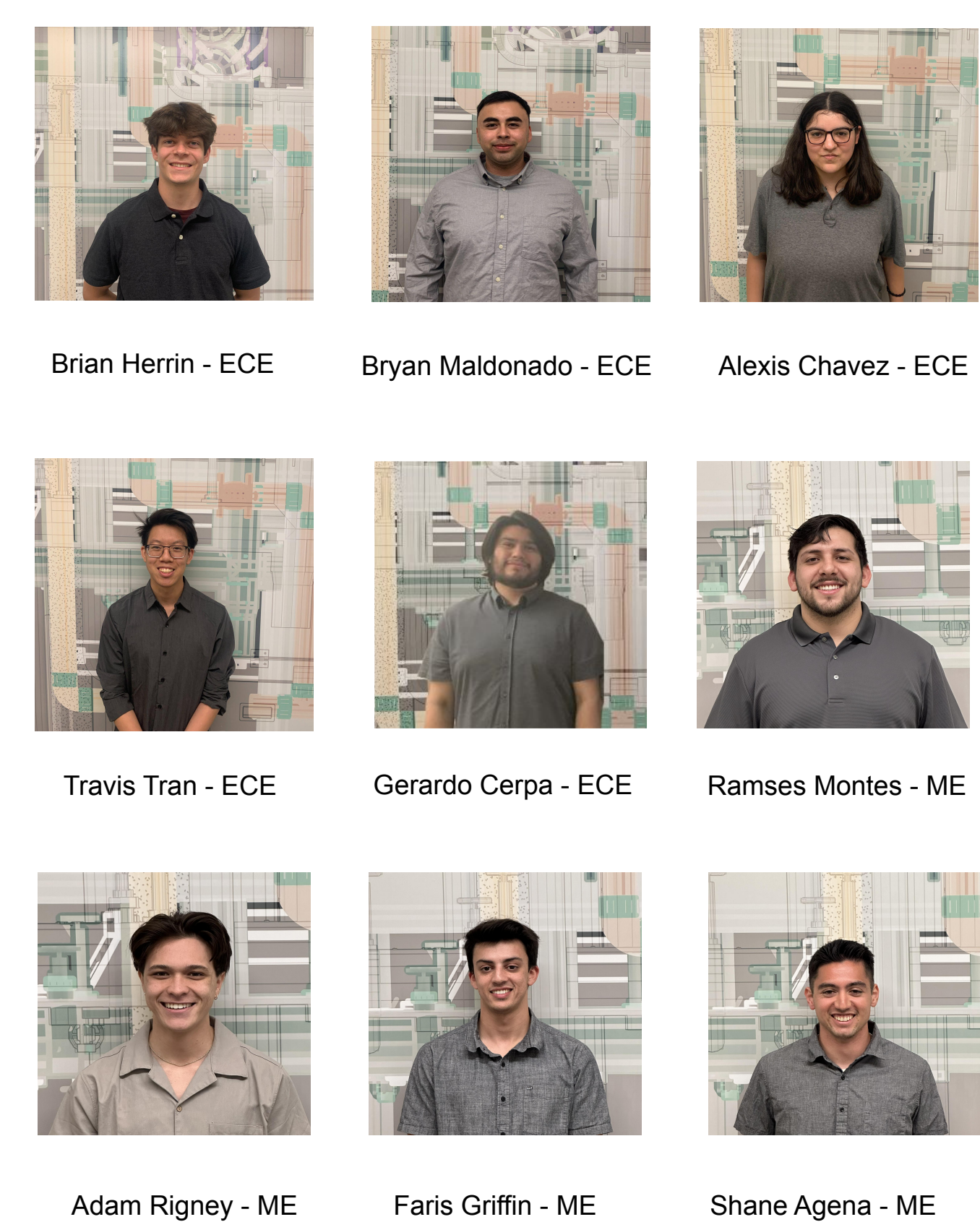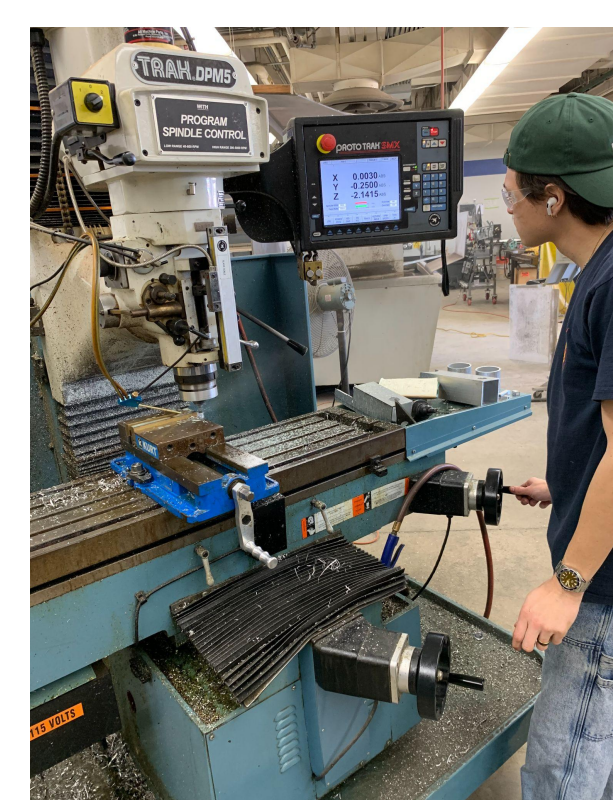
Meet The Team:

Brian Herrin - ECE
Bryan Maldonado - ECE
Alexis Chavez - ECE
Travis Tran - ECE
Gerardo Cerpa - ECE
Ramses Montes - ME
Adam Rigney - ME
Faris Griffin - ME
Shane Agena - ME

Acknowledgements:
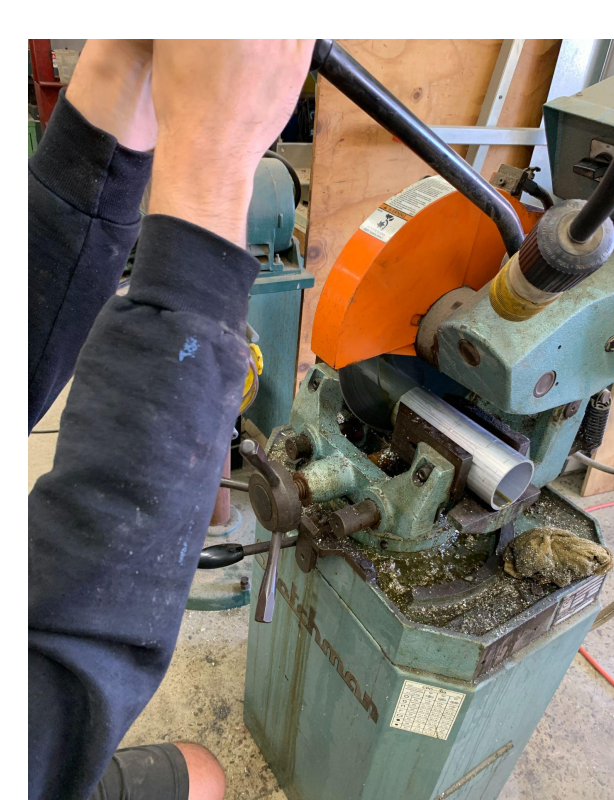
Manufacturing:

CNC Mill: Used to cut and notch square and round aluminum tubing. Used to round off edges of tubing and make holes in tubing.

Cold Cut Saw: Used to cut square and round tube. Used to make angle cuts and angled notches in tubes.
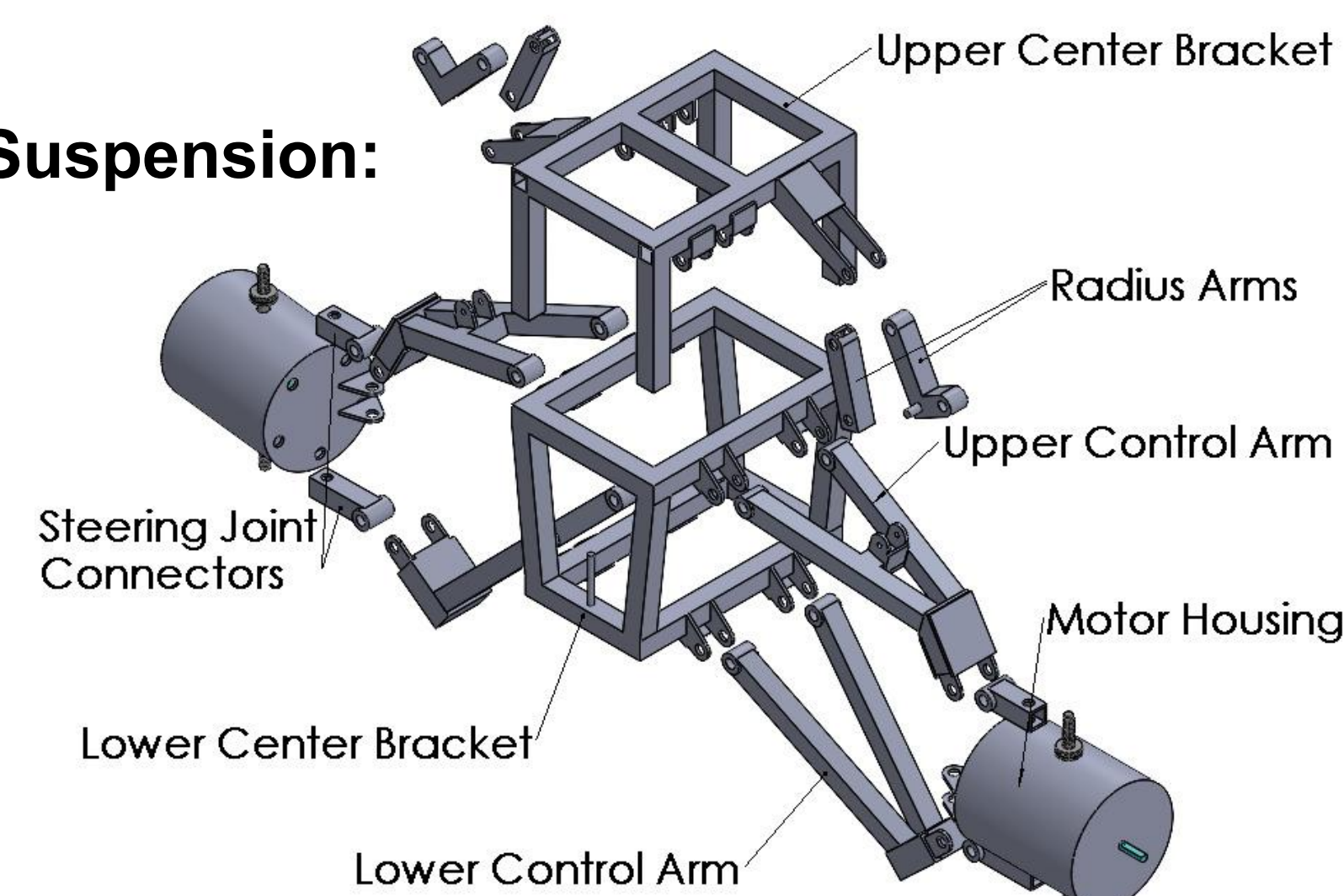
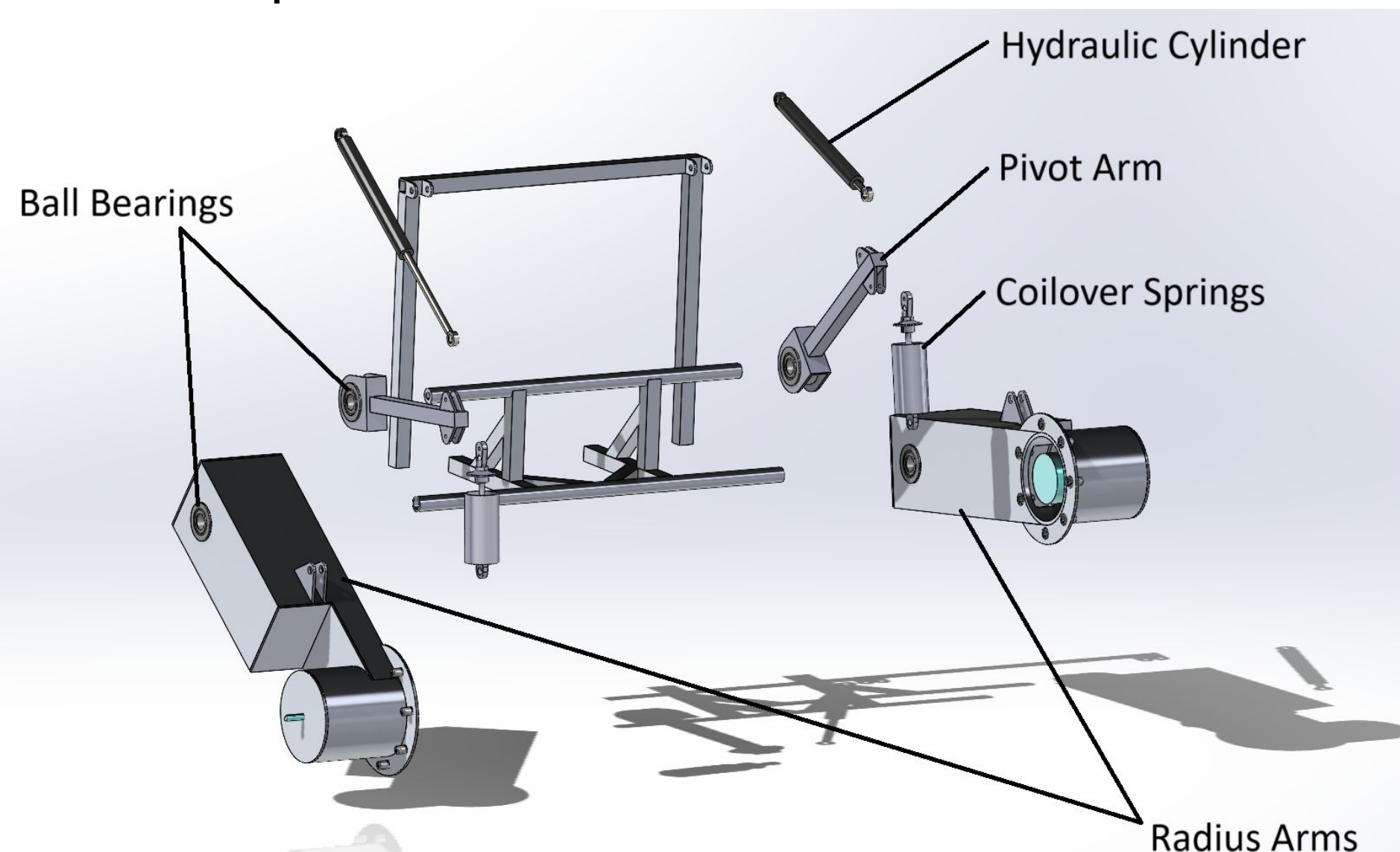Waterjet: Used to cut out all sheet metal parts, tabs, and gussets.

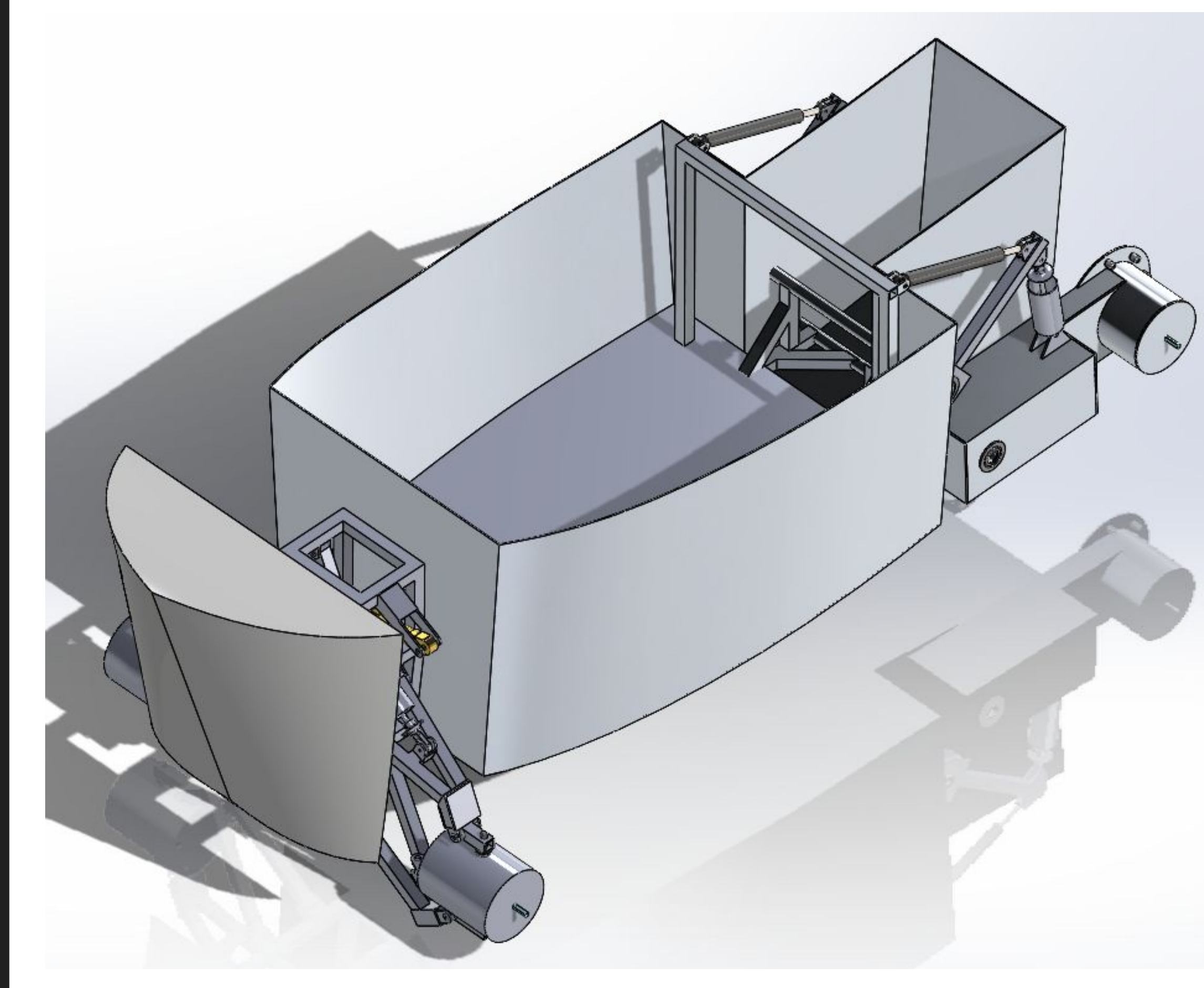Big Rep 3D Printer: Used to print out all 3D printed parts.

Key Components:

- Positive
- Negative
- ESC to Motors
- Hall Effect Sensor to PDB
- PDB to STM32
- STM32 to ESP32

Main Sub-Assemblies:

Front Suspension:

Upper Center Bracket
Radius Arms
Upper Control Arm
Steering Joint Connectors
Motor Housing
Lower Center Bracket
Lower Control Arm

Rear Suspension:

Hydraulic Cylinder
Pivot Arm
Coilover Springs
Ball Bearings
Radius Arms

Software Level Diagram:

Vehicle Design:

Spring 2024