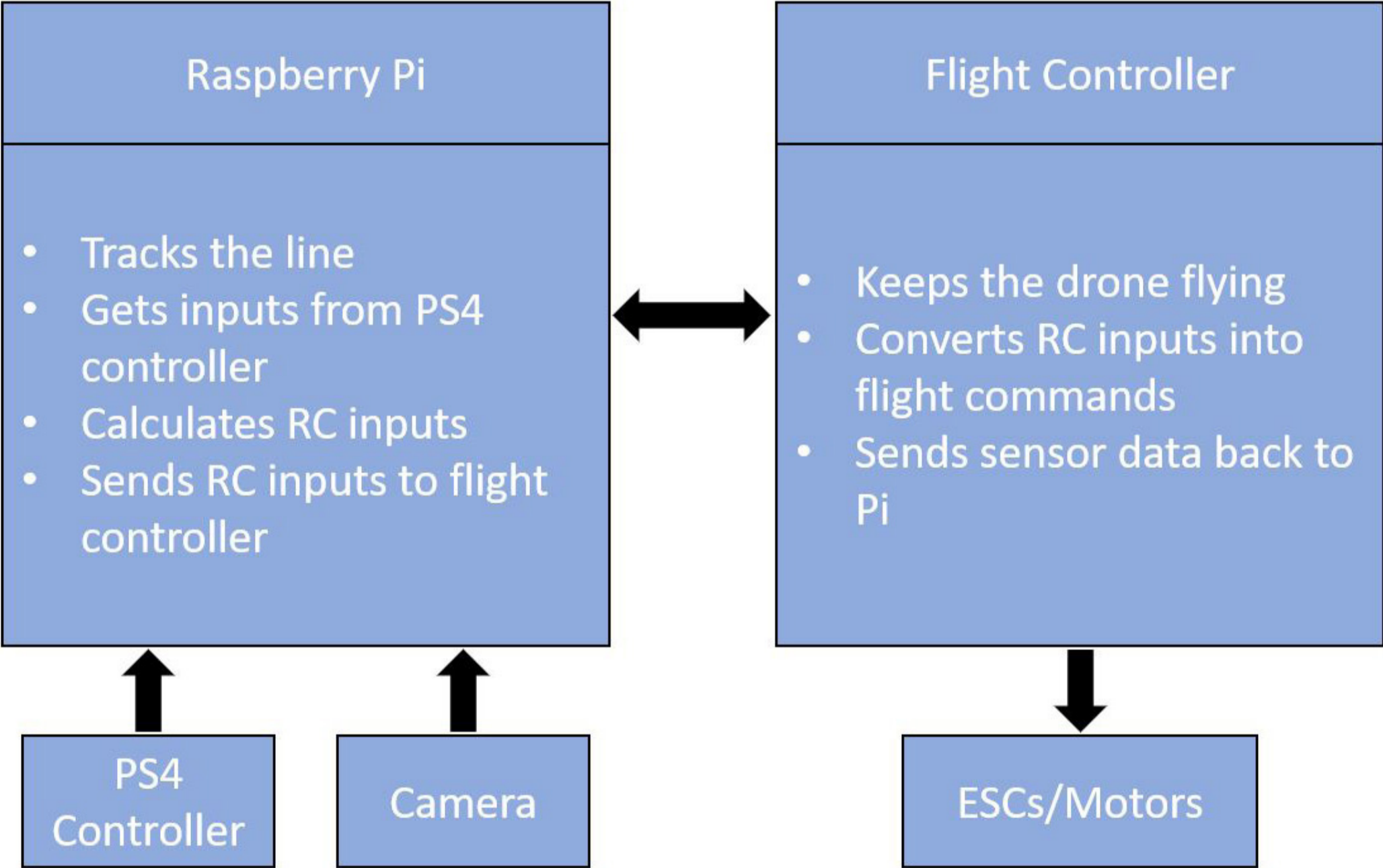
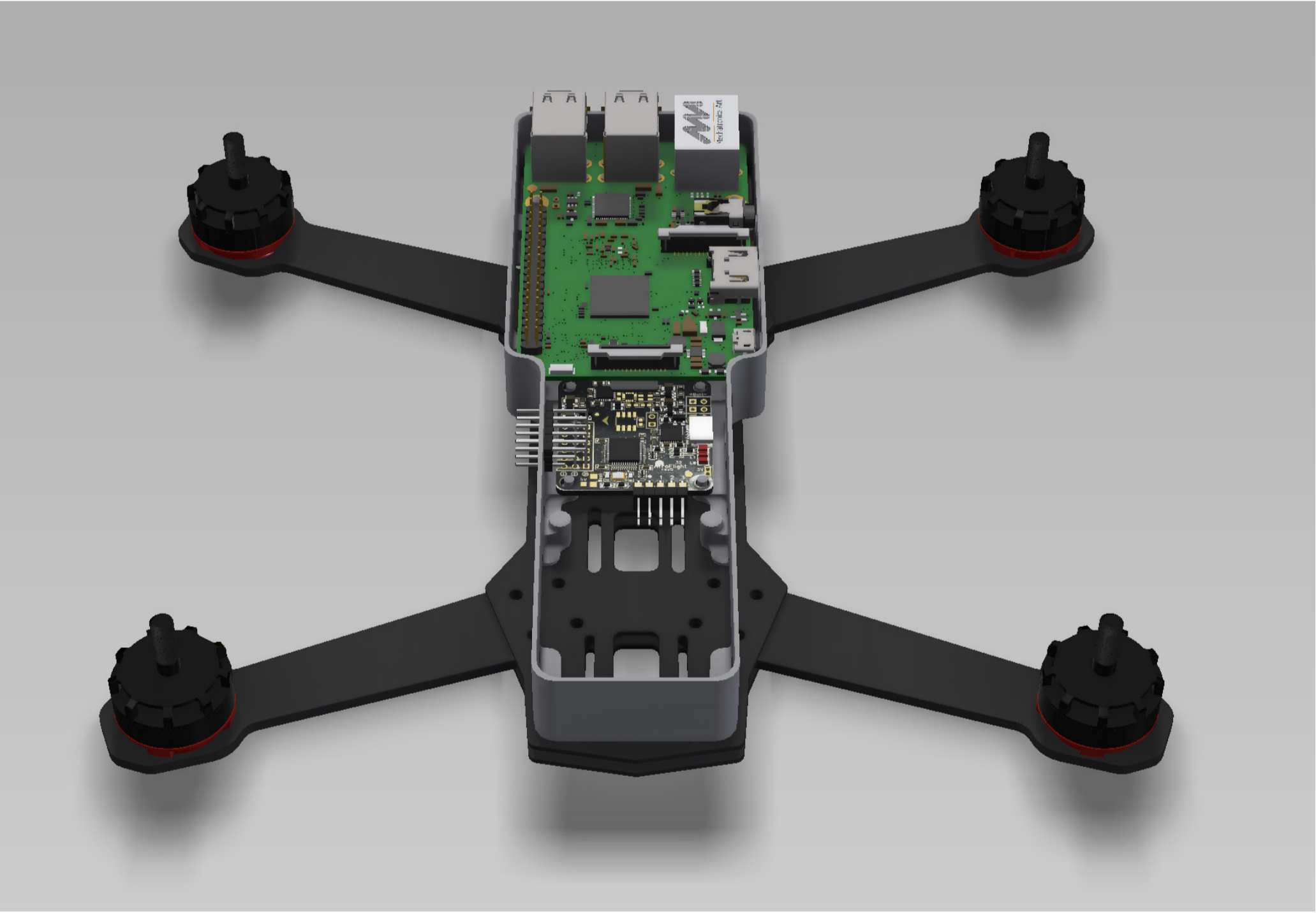


# Autonomous Drone

SCIROC / MAAXX



The Aero Society is working to develop an autonomous drone platform for competitions such as SciRoc and MAAXX

Using a combination of commercial off-the-shelf components and custom 3D printed parts, the UWE Aero Society is developing the drone hardware and accompanying software to create an autonomous drone system. This will include a dedicated flight controller to directly interface with the electronic speed controllers and motors, as well as a companion computer (e.g. Raspberry Pi or Nvidia Jetson) to take in sensor and camera data.

Although the goals for SciRoc and MAAXX are slightly different (emergency delivery of pills vs autonomous racing) the hardware and software required to complete these tasks are very similar. Both drones will need to use a camera system as well as other onboard sensors such as lidar to understand their location in the environment and what obstacles are around it.

Both of the challenges are also in environments with little or no GPS signal, meaning optical flow or SLAM (Simultaneous Localisation and Mapping) must be used to effectively navigate.