FitVos: A Cost-effective, Open Source UAV Designed for Easy Construction

Eastman, Logan

Beckman, Drex

FitVos, or Fully Integrated Thrust Vectoring Open Source System, is an open source alternative to common autonomous Unmanned Aerial Vehicle. Fitvos is very cost effective, allowing 2 1/2 pounds of payload for only $192 USD, compared to the average $1,100 USD commercial quadcopter of similar performance. FitVos was designed after researching quadcopters, and learning that current autonomous aviation, in any form, is not cost effective. Because all software used to develop FitVos is open source, anybody with internet access can download any program or file of the project for their own use, with the ability to freely distribute their own design changes, as they need. The building of a FitVos is designed to be easy enough for someone without a technical background. The open source design can be built from common hardware store materials, and the software used to operate FitVos can be freely downloaded and edited. The major component to overcome is the offset of torque roll. Because it is such a large force in FitVos, a solid construction is needed to ensure that the drone performs well in any situation. Keeping that in mind, we used wooden crossbars and steel brackets to ensure the shroud does not warp. In the future, we would like to see higher quality materials; however, whenever there is an increase in build quality, there will also be an increase in price.

Awards Won: