

Build a Localization Module for the Orbitix Spheros

In this project, you will design a localization module that can always stay on top of a Sphero (as shown in Fig. 1) for localization purpose when using the robot with the Vicon motion capture system. To use the motion capture system with a Sphero, first you need to build a distinct rigid model for the robot by placing some reflective Vicon markers (Fig. 2) on the robot. Yet, the Spheros rotate like spheres and thus we cannot place the markers permanently onto the robots. You will need to design an outer shell that can hold some Vicon markers and remain upright when the robot is rotating below it.



Fig. 1 Two Types of Spheros: (a) Sphero SPRK+ on the left; (b) Sphero 2.0 on the right



Fig. 2 Vicon reflective markers

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