

Coen 120 Proposal

By Chad Arimura

My Coen 120 project will complement my senior design. Our team of 3 Computer Engineers and 2 Electrical Engineers are working on a 10 foot, dual controlled (both internet and standard RF), helium-filled blimp through the resources and vision of the Santa Clara SCREEM laboratory.

Our senior design in its entirety is quite complex, has extensive functionality, and will serve many purposes to the benefit of Santa Clara University, the Athletic Department, and our own SCU Engineering department. I feel that it is beyond the scope of this project. That is why, for the purpose of this UML project, I will be taking the RF controls and "Collision Detection" portions of the project and implementing an embedded system to control both features.

There are a number of objects that are affected by the RF hand unit. The main object is the blimp itself. The flight controls are all located on a primary RF control. Another object is the real-time video pan, tilt, and zoom. A small camera about the size of a Chapstick is mounted on a swivel, which is controlled also by an RF controller. The real-time camera will send a constant video stream to the center console of the Leavey gym during basketball games, as well as broadcast video over the Internet (although that is all another story entirely, and not a part of my 120 project).

The collision detection system is one of many systems that will function in unison together on the Blimp. The tentative plan is to mount a small SONAR unit on the base of the blimp that will detect perimeter distance (the blimp is an indoor blimp). Collision detection turns on as the blimp nears it's "virtual boundary" and overrides the RF (or internet) controls.

On a side note, we are looking for a COEN advisor. We figured that since you work in the field of embedded real-time systems, it might be a good project for you to take on (besides the fact that it'll be the coolest project with the most publicity).

It is difficult to determine what part of the senior design project you are going to do for this project. How will the Collision Detection portion be seperated from the rest of the project? What target platform are you going to use for your SDP? Will you be able to demonstrate this by the time this project is due?

Please clarify and resubmit.

I really like the concept, just clarify the issues I have raised.