**Chapter 3: Realistic Constraints**

**Students:**

* Some of the students in the multidisciplinary competition team were not enrolled in the Capstone course. Therefore, there was the risk that the students would not be fully committed to the project. Thus, we had the challenge of motivating them to execute their tasks efficiently and effectively.
* Lack of knowledge concerning the proper design process to produce UAV from scratch.

**Limited Budget:**

* Honeywell provided an initial budget of $2,000. However, the total cost of the project depended on the hardware and software tools that were used. Therefore, the request for additional equipment had to be approved by the Polytechnic University of Puerto Rico (PUPR).

**Reliability:**

* Mission time was less than 15 minutes and this time was dependent on the proper selection of the components to be implemented in the design.
* Communication between the GCS and the UAV was considered critical and the UAV’s flight would be complicated if this communication could not be achieved.
* UAV mission was depended on how well the design took into consideration factors such as stable flight, safety controls, and a resistance to impact collisions.

**Third Party:**

* The flying coordinates were provided the day of the competition by Honeywell and they were subject to change.
* Honeywell specifications were subject to unexpected changes.

**Safety and Health:**

* The safety of the users and others around the drone was paramount. The drone design needed to meet the performance specifications as indicated in the competition rules and objectives previously stated.

**Timing and Logistics:**

* Most of the equipment components needed to be purchased and delivered.
* Timely installation and integration of all component was necessary to be able to perform the required tests.
* Compliance with Honeywell deadlines deliverables was mandatory.