

Background

Helo Flight Safety is a safety training system for helicopter pilots. It aims to provide real world training in an actual aircraft instead of simulator training. It trains and equips pilots with real-world experience to minimize weather accidents

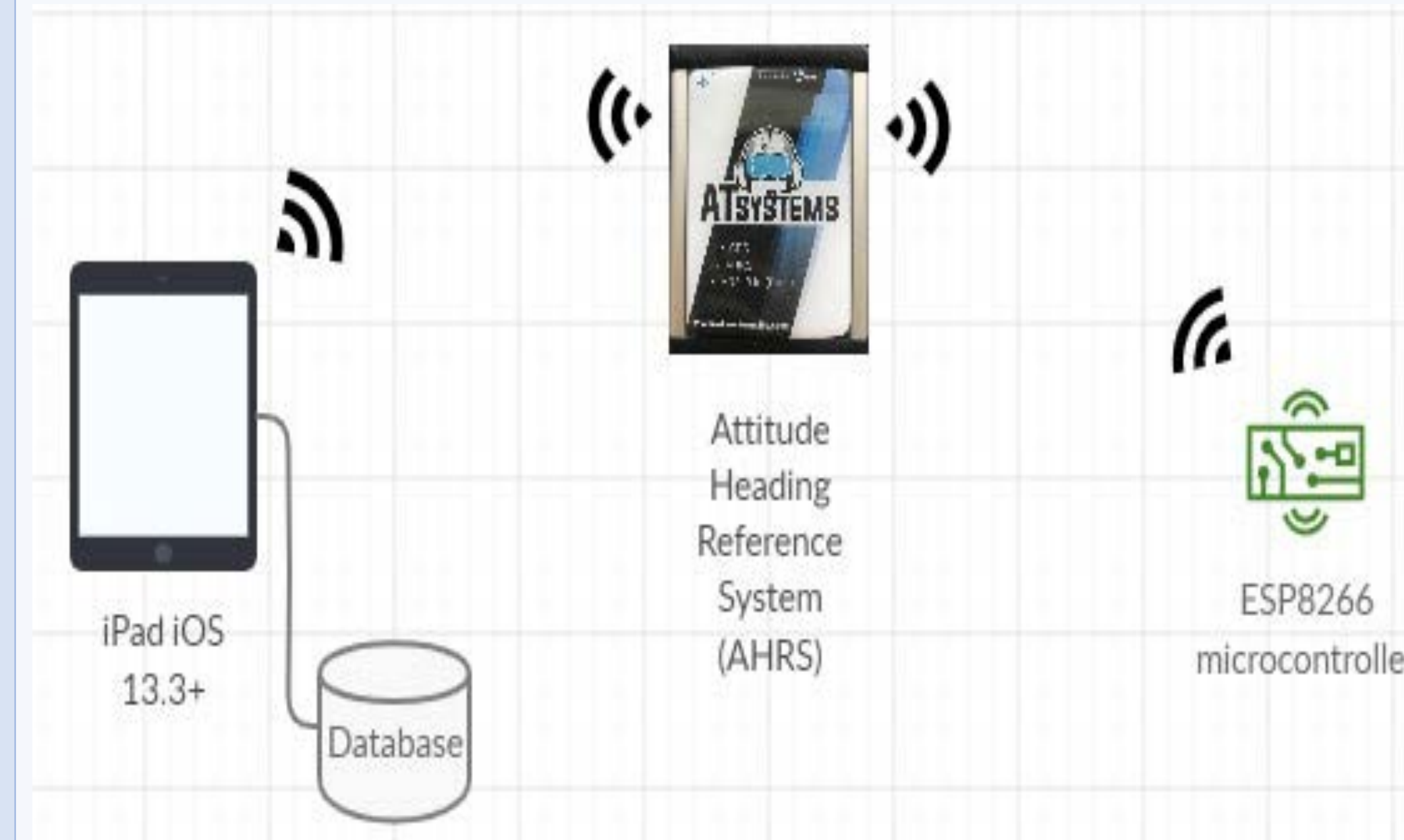
Objective

A system that will provide real world training to prevent accidents caused by deteriorating weather conditions in which pilots lose horizon references, which is sometimes also accompanied by loss of visual contact with the ground

Features

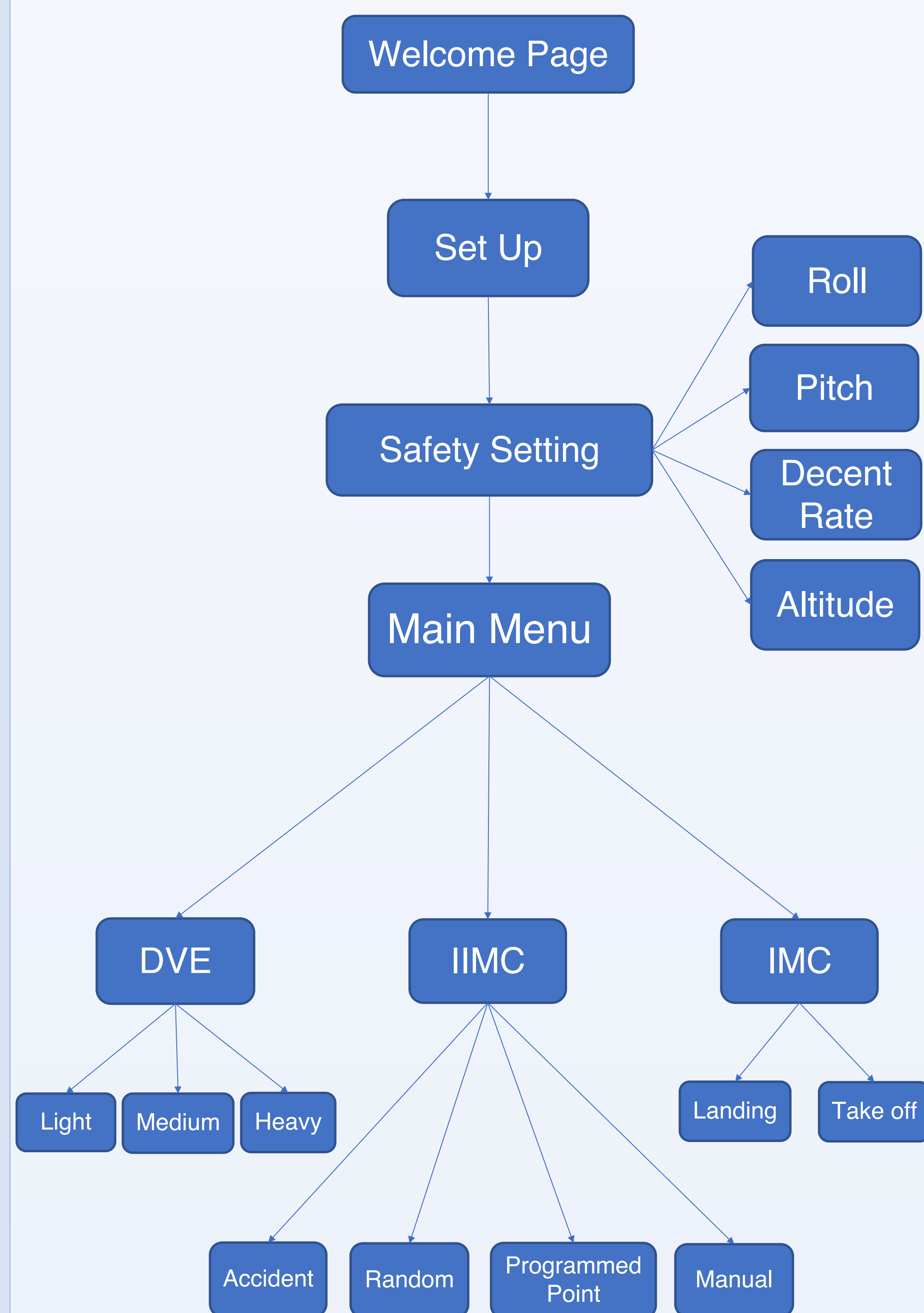
- Provides day and night time training interface
- Allows user to set safety limits of aircraft movement
- Offers safety features such as automated exit from training based on unsafe aircraft movement
- Offers three training programs
- Offers up to four training modes for each training program
- Keeps track of trainings for each user

Architecture



High level Architecture

Design



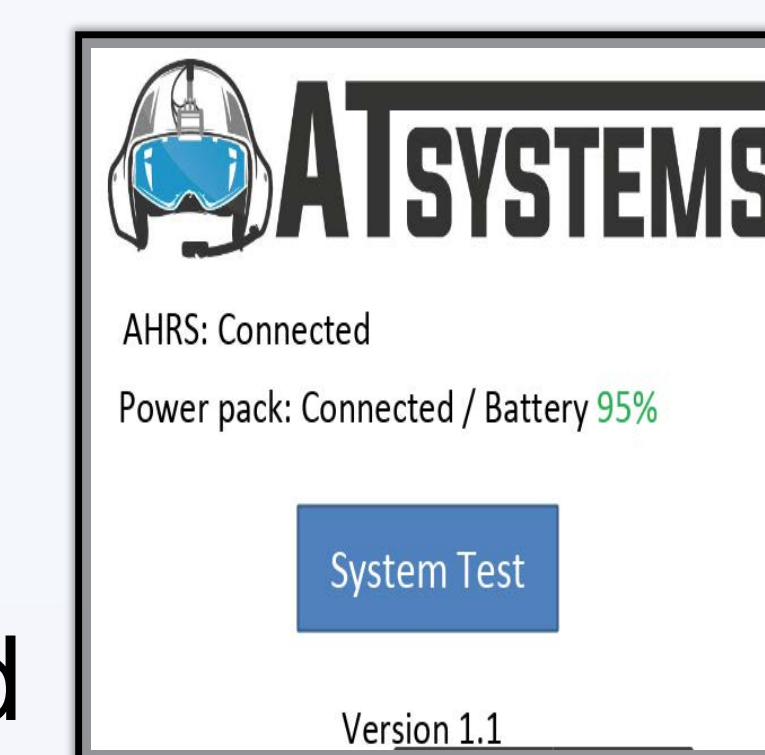
Flow Chat of UI

System Requirement

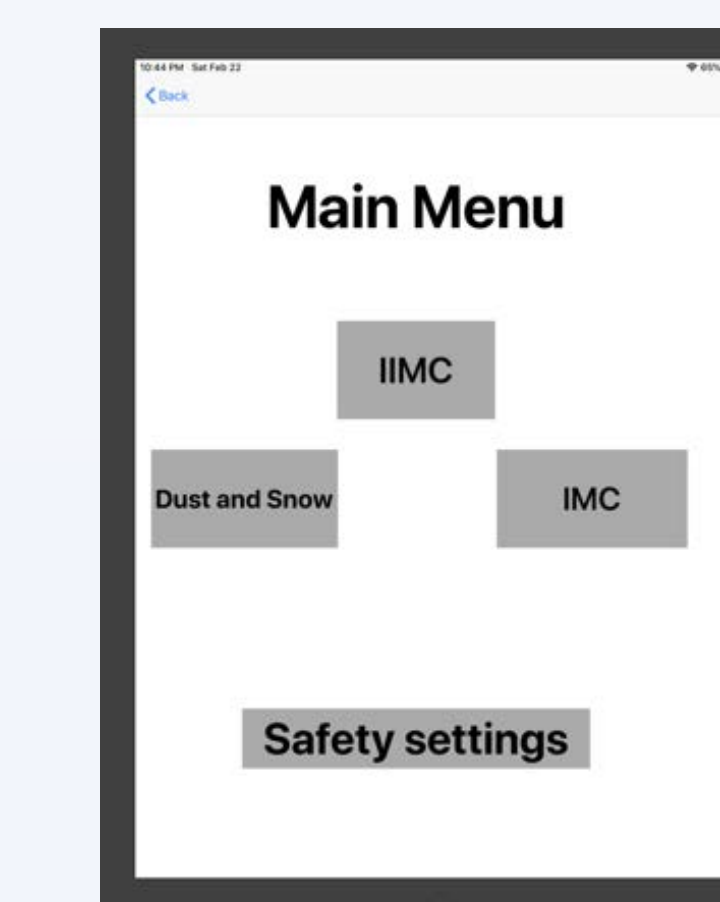
- iPad with iOS 13.3 or higher
- ESP8266-12 Microcontroller
- UDP protocol based network
- Database

Delivered Product

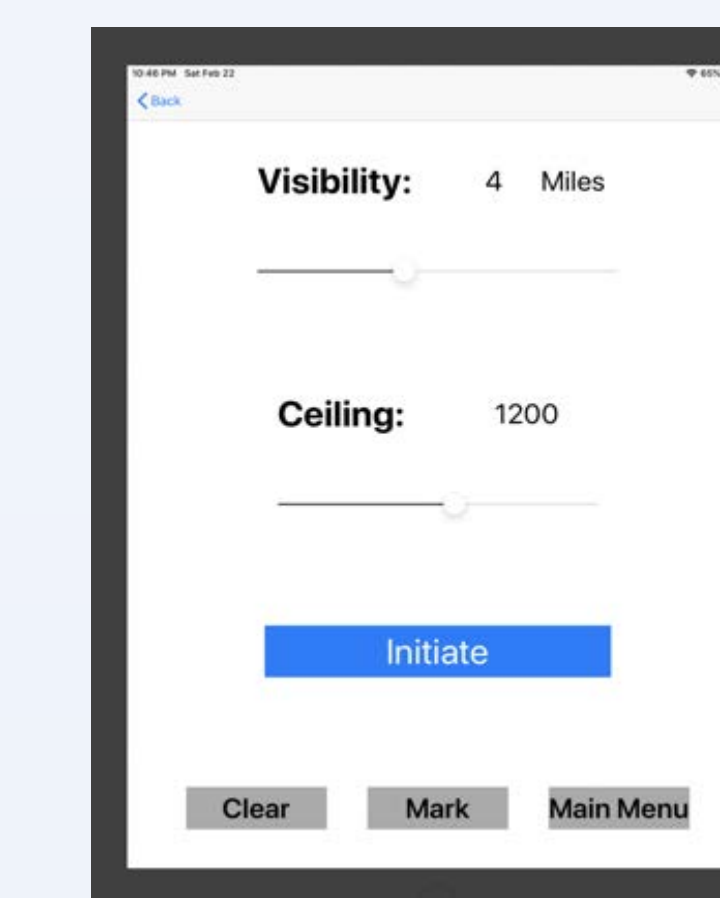
- The welcome screen with AHRS connection status, its battery percentage, software version, and a system test button



- Three training program types with option of setting safety limits of aircraft movement



- Offers training in manual, random, programmed latitude/longitude point modes. Also offers the experience of training in a real-world accident scenario



- Reads aircraft movement data from AHRS device to create simulations and sends them to the pilot's visor

Technologies



Future Work

- Further integration with sensors
- Create multi-threaded environment for network data receiving, processing, and sending
- Find common logic to run independent of platform
- Work with military GPS to give exact location