



# Senior Design Project in Electrical & Computer Engineering



## Signal Processing Methods for Mitigating Effects of GPS Interference

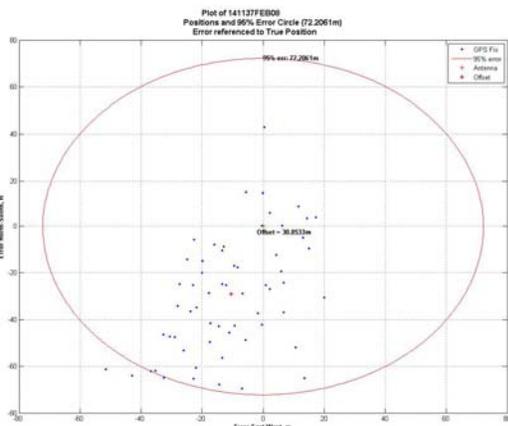
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Sponsor: USCG Research and Development Center

### Project Goals

- Investigate the signal processing methods to mitigate the effects of GPS interference
- Start a library of signal processing methods for GPS

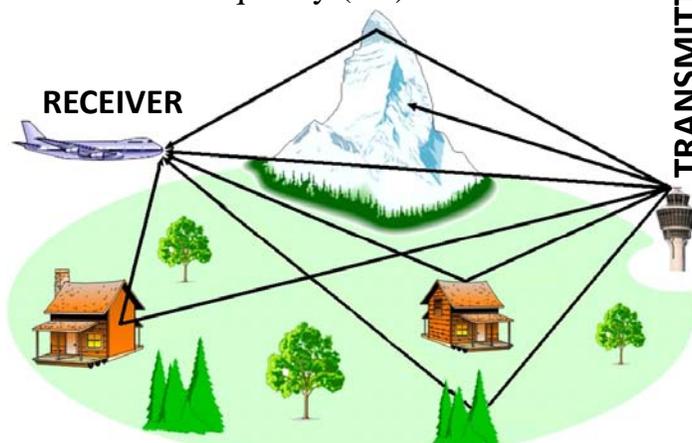


### Project Objectives

- ✓ Implement a Software GPS Receiver
- ❑ Mitigate the effects of Multipath
- ❑ Mitigate the effects of Radio Frequency (RF) Interference

### Background Information

- Multipath GPS: Signals reaching the antenna through different paths.
- RF Interference: RF signals causes a receiver unable to track GPS Satellites



Graphical Depiction of Multipath



### Results / Future Plans

- ✓ Found and Implement a Software GPS Receiver (OpenSource GPS)
- ✓ Created Simulations to test GPS Receiver
- ❑ Find a Signal Processing Method
- ❑ Test the Signal Processing Method

### Project Timeline

- Oct 30: Create or find a software receiver that is equivalent to maritime GPS hardware receivers
- Feb 29: Finish analysis of the GPS Signal
- Mar 11: Develop a signal processing method to minimize the GPS signal interference
- Mar 26: Test the signal processing method

