Black Box Acoustic Detection

The black box will emit three signals with three different frequencies. The job of the DaNI is to detect these specific signals in order to determine where the black box is. The DaNI will have two microphones on its corners looking forward. The DaNI will measure the time difference between one microphone detecting the signal before the other microphone. If the left microphone takes less time than the right microphone to detect the signal, the DaNI will need to move to the left.

There will be a threshold put in place for the difference in time delay so that the DaNI isn’t constantly moving left and right to be right in the centre.

In order to remove noise from the signal being detected there will be a bandpass filter on the myRIO. The centre frequencies of the filters will be the three frequencies emitted. There will also be a threshold for the voltage. If the voltage level of the microphones are above a certain level, the DaNI will begin comparing the time delays of the microphones. This prevents the DaNI from detecting noise as the wanted signal.



