Test Procedure

During the Demonstration we will demonstrate some steps for Communication, Telecontroller and Detection subsystems. This document covers these steps.

In order to transfer commands, communication and telecontroller subsystems will be tested. Test procedure for command transfer is as follows:

1. A song will be played in Raspberry Pi and transmitted through our transmitter Antenna to our receiver radio. The song should be heard from different distances through DEMO location or audio wave should be observed with Oscilloscope.
2. Different sine waves created in C++ will be transmitted from our transmitter Antenna to our receiver radio or module.
3. Different frequencies should be distinguishable with human ear from different distances or audio wave should be observed with Oscilloscope.
4. For different user inputs from buttons different sine waves will be heard from radio’s headphone or audio wave should be observed.
5. For different user inputs we should observe different outputs from LEDs which corresponds to different commands.
6. Step 5 will be tested for different distances at DEMO place.

For detection and transferring the image data we are still considering more than one option and working on both of the options. So, just in case of any unprecedented problem we decided to write test procedure for both plans. The following two test procedures are for different problem-solving methods.

In order to detect image information and send it to the user, detection and communication subsystems will be tested. Test procedure for image processing method is as follows:

1. Existence of the ball will be understood by the Raspberry Pi.
2. Location data as left or right will be understood, and corresponding LED will light up.
3. Location data will be transferred as a sine wave to user radio or receiver module. Different sine waves should be heard from radio with human ear or audio wave should be observed.
4. The data will be transferred using the same method as stated in the previous test procedure. The steps 4-6 will be implemented for different ball positions rather than different user inputs.

In order to detect image information and send it to the user, detection and communication subsystems will be tested. Test procedure for drone kit option is as follows:

1. The connections will be checked.
2. Video transmission will be tested for 0-meter distance.
3. Video transmission will be tested for 10-meter distance.
4. Video transmission will be tested for 30-meter distance.