Basic Requirements Document

# Automated Drone Sentry

## List of Changes to Document:

**Draft Version: 1.0**

Initial version: 11/23/2024

Minimum Viable Product version: 1.0

### Project Name: Automated Drone Sentry

### Project ID: ADSEN86

## Introduction:

This project is meant to create an automated drone sentry. This drone will possess the ability to hover in the air. It will follow the user like a personal sentry drone. User can perform several use cases and can send different commands to make the drone perform different operations. Underlying is the basic functionality list of this drone:

## Basic Requirement List: ADSEN86

1. This drone is capable of 🡪 ***ADSEN86-001***
   1. Hovering -- ***ADSEN86-001-001***
   2. Move in all directions -- ***ADSEN86-001-002***
   3. Rotate 360 degrees in place. -- ***ADSEN86-001-003***
   4. Move at least the speed of the human it is trying to follow. ***ADSEN86-001-004***
2. This drone will have a visual camera based input system with which it can process information and generate actions that the drone can take. These actions are: 🡪 ***ADSEN86-002***
   1. Move in the direction of the user. As he walks -- ***ADSEN86-002-001***
   2. Attempts to avoid obstacles in front of it or around it. -- ***ADSEN86-002-002***
   3. Move ahead of the user or come closer to the user when user uses a hand movement gesture Type 1. -- ***ADSEN86-002-003***
   4. Move higher up or lower down on hand gesture Type 2 -- ***ADSEN86-002-004***
   5. If hand gesture Type 3 is signaled then the drone will look for potential humans and signal their presence. -- ***ADSEN86-002-005***
3. The drone will have a 🡪 ***ADSEN86-003***
   1. Green light to Indicate all good -- ***ADSEN86-003-001***
   2. Red indicator to indicate that there is potential people. -- ***ADSEN86-003-002***
4. It will have a Display that will render the video that is being recorded and will 🡪 ***ADSEN86-004***
   1. output the video on the display with a marking that will map to the human/animal it has detected -- ***ADSEN86-004-001***
   2. A potential direction it had decided to move towards in the form of a rendered Arrow. -- ***ADSEN86-004--002***
5. It should be configurable to connect to a WIFI network and be encrypted over the link. 🡪 ***ADSEN86-005***
   1. It should get the video over the link. -- ***ADSEN86-005-001***
   2. It should be able to send the list of entities detected as an event over the WIFI network. -- ***ADSEN86-005-002***

# Requirement List

* ***ADSEN86-001***
  + ***001***
  + ***002***
  + ***003***
  + ***004***
* ***ADSEN86-002***
  + ***001***
  + ***002***
  + ***003***
  + ***004***
  + ***005***
* ***ADSEN86-003*** 
  + ***001***
  + ***002***
* ***ADSEN86-004***
  + ***001***
  + ***002***
* ***ADSEN86-005***
  + ***001***
  + ***002***