User Requirement Specifications

# Fly in a confined indoor space

1. Attempt to maintain a set distance from the wall, floor and other obstructions.
   1. Reposition itself when a new obstruction presents itself.
   2. Reroute when an obstruction is detected.
2. Negate the effects of being in close proximity with other objects.
   1. Attitude control must be equipped to handle near wall effect.
   2. Attitude control must be equipped to handle ground effect.
3. Correct attitude if a collision occurs.
   1. Platform should be such that a collision will not hinder the drone from completing its mission.
   2. Attitude control should stabilise the platform post collision.
4. Fly in GPS constrained environments using a different form of sensing.
   1. The platform must provide the ability to process this information.
      1. On board accompanying computer (OBAC).
      2. Link to flight controller from OBAC required.

# Complete industrial missions

1. The platform must have an autopilot option.
   1. With the ability to switch back and forth between manual and auto.
   2. The platform must be able to send flight data to the GCS.
   3. Must be able to update mission plan.
2. Have the ability to use industrial sensors.
3. The platform must provide an interface to manage these sensors.
   * 1. Capability to send the live sensor/camera feedback to the ground control station (GCS).
4. The platform must provide a mechanical mounting mechanism.
5. The platform must have adequate thrust to account for the additional weight.
6. The platform must have adequate electrical power to run the sensors and the OBAC.
7. Flight time must be adequate to complete a mission without needing to recharge (exact length of time to be determined >=20 minutes).

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| Will be handled in future work, this project should allow expansion into these fields. |