**MISSION PLANNER**

The mission planer is built using ROS library. As in a generic ROS code planner starts with the creation of a ROS node. After the node is up and running, we push missions to each and every drones. All the mission files are stored as CSV files. We parse those CSV files extract data from them. Each line in that file is a waypoint. Waypoint is ROS representation of a MAVLink comand.

The whole CSV file is converted into an array waypoints. To push this array into each drone, we use the ROS service *'/mavros/mission/push'.* After this service is available and waypoints are pushed into the drones, we put the drones in *‘AUTO MISSION’* mode.

In the background we run ROS subscribers to update the current locations and waypoints of all the drones. These values are needed in dynamic change of mission files. We also have added facility to alter the mission of a drone when it is already in flight. When the updation is in progress the drones are put in ‘*AUTO LOITER*’ mode and once done they are put back in ‘*AUTO MISSION*’ mode.

Once all the drones are uploaded with their respective missions and put in ‘*AUTO MISSION’ mode.* they need to be armed. This is done using the ROS service  *‘/mavros/mission/push'.* Then the code goes to an infinite loop waiting for each drones to complete their missions.

The same can be done using QgroundControl, where we can draw waypoints on the map. Missions are pushed into the drones by pushing *‘upload’* button. It shows the complete mission on the right side and options for adding new waypoints on the left side.

