

## Session 5

Now controlling the drone only involves publishing values in the respective subscriber. You can get a value from publisher to manipulate and play around. You need to know the datatype as well.

Go through the site to view all of the topics in a drone.

<http://wiki.ros.org/mavros>

6.8 , 6.15 and 6.17 are important.

You can give appropriate values ( Using Corresponding datatypes to control the position and velocity).

All the datatypes in mavros is Structures. So we can get multiple values from a single subscription.

Eg: To control the X component of drone : The datatype you need to use is

**geometry\_msgs/PoseStamped** and to set the value you need to change this

<variable>.pose.position.x . x is a variable whose address is inside position which is inside pose.

You need to arm and takeoff to perform your desired tasks.

If you want to publish something then go to the above site ,find your required topic. Left side is data type click on that. In the compact message definition you will be having < datatype variablename>.Click on the datatype again

To address the innermost variable say x in setpoint\_position/local topic with you define position as setpoint\_position/local dummy ,

Dummy.variable1.variable2.x =11

(dummy.pose.position.x =11)

{ This is because it is a structure}

Also all global topics work only if there is a GPS.

All local topics are defaulted to work with GPS but can be made to work with other position/velocity/acceleration sensors.

One of the goals of Smartcopter is to make these local topics to work with a realsense tracking sensor.

### End Goal 1

Write a program to draw a square with a drone as you have seen in video2. You can use QGC to arm and takeoff.

Now search for topics involving arming and takeoff. Include this in the previous program.