7.   Conclusion:

The task of the team project is to program the collective behavior of decentralized and self-organized copters in achieving the cooperative height holding. The number of agents/ population is four which are locally interacting by searching two neighbors this leads to emergence of our desired swarm behavior. The search space is limited to 50 cm vertically (Range 40 cm to 90 cm) and 30 cm horizontally(Range 30cm- 60cm).

The agents, in our case copters, are performing two tasks defined below,

1) O s c i l l a t i n g   :
   Moving in a predefined vertical range (40 cm to 90 cm) in a step wise manner where step is of 2.5 cm/sec.

2) Detecting Neighbors
    Anything found in the set horizontal range of sonar sensors, mounted on the copters ,is considered as a neighbor.

Algorithm is defined to reach the optimal solution that is to achieve state 2, the state where every individual copter has succeeded to find its two neighbors. This local behavior of each copter generates global swarm behavior i.e.: cooperative height control.