CLAIMS

1. A system for managing an agriculture plantation comprising

a plantation information management server operable to send at least one electronic request to manage the agricultural plantation, the at least one electronic request comprises at least one target within the agricultural plantation;

a central processor arranged in data communication with the plantation information management server to receive the electronic request to form a first dataset; the first dataset comprises data related to a size, a location and the at least one target within the agricultural plantation;

an unmanned vehicle command and control server arranged in data communication with a plurality of base stations to deploy the plurality of base stations at predetermined locations within the agricultural plantation; each of the plurality of base stations arranged in data communication with at least one unmanned aerial vehicle; the unmanned vehicle command and control server further arranged in data communication with the central processor to receive a second dataset related to at least one operation of the at least one unmanned aerial vehicle; and

a block segregator installed with a dynamic partitioning algorithm, the block segregator arranged to receive the first dataset as input to generate an output, the output comprises data related to the division of the agricultural plantation into a plurality of smaller areas.

2. The system according to claim 1, wherein the first dataset further comprises at least one of the following information related to the agricultural plantation: terrain, transportation route, planned locations of the plurality of base stations.

3. The system according to claim 1, wherein the block segregator comprises an optimizer operable to minimize the total number of the plurality of smaller areas.

4. The system according to claim 1, further comprising the plurality of base stations, wherein at least one of the plurality of base stations is a mobile base station and at least one of the plurality of base stations is a static base station.

5. The system according to claim 4, wherein the static base station is deployed within one of the plurality of smaller areas and arranged in data communication with the mobile base station.

6. The system according to claim 1, wherein the central processor is arranged in data communication with a schedule database, the schedule database operable to store at least one schedule related to the at least one operation of the at least one unmanned aerial vehicle.

7. The system according to claim 1, further comprises an airspace management and air traffic control module arranged in data communication with the plurality of base stations and the at least one unmanned aerial vehicle.

8. The system according to claim 7, wherein the airspace management and air traffic control module is operable to segregate the region which the at least one unmanned aerial vehicle operates within into a plurality of airspaces.

9. The system according to claim 8, wherein the plurality of airspaces comprises a first airspace measured from ground level to a reference point plus a first predetermined distance above the reference point.

10. The system according to claim 9, further comprises a second airspace extending by a second predetermined distance above the first airspace.

11. The system according to claim 10, further comprises a third airspace extending by a third predetermined distance above the second airspace.

12. The system according to any one of claims 8 to 11, wherein the at least one operation of the at least one unmanned aerial vehicle comprises dropping a payload over an area or an object within the smaller area.

13. The system according to claim 12, wherein the plurality of base stations are operable to receive information relating to the plurality of airspaces to control the at least one unmanned aerial vehicle within the first airspace to drop the payload.

14. The system according to claim 13, wherein the base station is operable to control the UAV to operate within the second airspace after dropping the payload to return to the base station.

15. The system according to claim 1, wherein the block segregator is arranged in data communication with at least one of the unmanned aerial vehicle to receive at least

one image relating to the geographical surrounding the at least one unmanned aerial vehicle operates within.

16. The system according to claim 5, wherein the plurality of base stations comprises a plurality of mobile base stations, wherein each mobile base station is operable to data communicate with other mobile base stations.

17. The system according to any one of the preceding claims, wherein the data communication between the unmanned vehicle command and control server and the plurality of base stations is facilitated via a network operator.

18. The system according to any one of the preceding claims, further comprises a mobile device arranged in data communication with the at least one unmanned aerial vehicle to control the at least one unmanned aerial vehicle near the vicinity of the at least one target.

19. The system according to claim 1, further comprises a target image database to store a plurality of images determined to be visually similar to the at least one target.

20. The system according to claim 19, wherein the target image database is operable to store a plurality of images determined not to be targets. [Novel]

21. The system according to claim 19 and 20, wherein the plurality of images determined to be targets and determined not to be targets is fed as an input dataset into a machine-learning algorithm to build an internal model of the target.

22. The system according to claim 1, further comprising the at least one unmanned aerial vehicle , wherein each of the at least one unmanned aerial vehicle comprises:

a propulsion device operable to move the unmanned aerial vehicle,

a communication module operable to facilitate data communication between the unmanned aerial vehicle with at least one of the base stations,

an image capturing device operable to capture images;

a payload storage tank; and

a payload dispensing mechanism.

23. The system according to claim 22, wherein the payload dispensing mechanism is shaped and adapted to dispense at a point target or an area target.

24. The system according to claim 23, wherein the payload dispensing mechanism comprises a plurality of nozzles taking reference to a centre nozzle.

25. The system according to claim 24, wherein the plurality of nozzles are pointed towards the centre nozzle for releasing a fluid payload at the point target.

26. The system according to claim 24, wherein the plurality of nozzles are pointed outwards from the centre nozzle for releasing a fluid payload at the area target.

27. The system according to any one of claims 4, 5, and 16, wherein the static base station comprises a recharging pod, a refill pod, a payload supply, a communication device for data communication with at least one mobile base station and the unmanned vehicle command and control server, and a processor server in data communication with the schedule database.

28. The system according to any one of claims 4, 5 and 16, wherein the mobile base station comprises a recharging pod, a refill pod, a payload supply, a communication device for data communication with at least one unmanned aerial vehicle, and a processor server in data communication with the schedule database.

29. A method for managing an agriculture plantation comprising the steps of:

receiving from a plantation information management server, at least one electronic request to manage the agricultural plantation, the at least one electronic request comprises at least one target within the agricultural plantation;

forming a first dataset; the first dataset comprises data related to a size, a location, and the at least one target within the agricultural plantation;

dynamically generating, based on the first dataset as input, an output, the output comprises data related to the division of the agricultural plantation into a plurality of smaller areas;

sending a second dataset to an unmanned vehicle command and control server, the second dataset related to at least one operation of at least one unmanned aerial vehicle; and

deploying, via the unmanned vehicle command and control server, a plurality of base stations at predetermined locations within the agricultural plantation; each of the plurality of base stations arranged in data communication with at least one unmanned aerial vehicle.

30. The method according to claim 29, wherein the first dataset further comprises at least one of the following information related to the agricultural plantation: terrain, transportation route, planned locations of the plurality of base stations, actual location of at least one of the plurality of base station.

31. The method according to claim 29, further comprising the step of optimizing the number of smaller areas.

32. The method according to claim 30, further comprises the step of generating a schedule based on the at least one target within the agricultural plantation, and storing the generated schedule by a schedule database.

33. The method according to claim 32, further comprises an airspace management and air traffic control module arranged in data communication with the plurality of base stations and the at least one unmanned aerial vehicle.

34. The method according to claim 33, further comprising the step of segregating, by the airspace management and air traffic control module, the region which the at least one unmanned aerial vehicle into a plurality of airspaces.

35. The method according to claim 34, wherein the plurality of airspaces comprises a first airspace measured from ground level to a reference point plus a first predetermined distance above the reference point.

36. The method according to claim 35, further comprises a second airspace extending by a second predetermined distance above the first airspace.

37. The method according to claim 36, further comprises a third airspace extending by a third predetermined distance above the second airspace.

38. The method according to claim 29, further comprising the step of loading a plurality of unmanned aerial vehicles and generating an optimal flight path after the step of deploying the plurality of base stations.

39. The method according to claim 30 and 35, further comprising the step of moving the unmanned aerial vehicle within the first airspace to the at least one target.

40. The method according to claim 39, further comprising the step of locating, by an image capturing device mounted on the unmanned aerial vehicle, the at least one target.

41. The method according to claim 40, further comprising the step of releasing a payload on the at least one target.

42. The method according to claim 41, further comprising the step of collecting a status associated with the release of payload.

43. The method according to claim 36 and 42, further comprising the step of moving the unmanned aerial vehicle into the second airspace, and moving away from the target and towards the base station after the step of releasing the payload.

44. The method according to claim 43, further comprising the step of maintaining the unmanned aerial vehicle.

45. The method according to claim 42, further comprising the step of generating and synchronizing collected data to be sent to the base station.

46. The method according to claim 38, wherein the step of generating the optimal flight path comprises utilizing at least one of the following as an objective function: minimize distance between the unmanned aerial vehicle and the target; minimize power consumption of the unmanned aerial vehicle; and subjected to the constraints of no-fly zones and obstacles.