CLAIMS

We claim:

1. A method comprising:

determining, by a control system, an operational location at which to deploy operational infrastructure, wherein deployment of operational infrastructure enables charging of a battery of an unmanned aerial vehicle (UAV) from a group of UAVs, wherein the group of UAVs includes at least (i) a first UAV of a first type configured to deploy operational infrastructure and (ii) a second UAV of a second type configured to carry out a task other than deployment of operational infrastructure, and wherein determining the operational location at which to deploy the operational infrastructure comprises determining the operational location based on a round trip distance between the operational location and an item delivery location being less than a flight range of the second UAV;

causing, by the control system, the first UAV to deploy operational infrastructure at the operational location; and

causing, by the control system, the second UAV to charge a battery of the second UAV using the operational infrastructure deployed by the first UAV at the operational location.

2. The method of claim 1, wherein the second UAV of the second type is configured to transport a payload other than operational infrastructure.

3. The method of claim 1, further comprising:

receiving, by the control system, a request for a transport task having an associated item-source location; and

determining, by the control system, that the item-source location corresponds to the operational location and responsively causing the second UAV to perform the transport task corresponding to the received request.

4. The method of claim 1, wherein the operational infrastructure deployed at the operational location comprises a ground charging system that includes one or more of the following: (i) a charging interface configured to connect to a universal power interface, (ii) a solar panel, or (iii) an energy storage device.

5. The method of claim 1, further comprising:

determining, by the control system, another operational location at which to deploy another operational infrastructure, wherein deployment of the another operational infrastructure also enables charging of a battery of a UAV from the group of UAVs; and

causing, by the control system, the first UAV to deploy the another operational infrastructure at the another operating location.

6. The method of claim 1, wherein the group of UAVs also includes a third UAV of the first type configured to deploy operational infrastructure, the method further comprising:

determining, by the control system, another operational location at which to deploy another operational infrastructure, wherein deployment of the another operational infrastructure also enables charging of a battery of a UAV from the group of UAVs; and

causing, by the control system, the third UAV to deploy the another operational infrastructure at the another operating location.

7. The method of claim 1, further comprising:

determining, by the control system, another operational location at which to deploy the operational infrastructure that was deployed by the first UAV at the operational location; and

causing, by the control system, the first UAV to move the operational infrastructure away from the operational location and to deploy the operational infrastructure at the another operational location.

8. The method of claim 1, wherein the group of UAVs also includes a third UAV of the first type configured to deploy operational infrastructure, the method further comprising:

determining, by the control system, another operational location at which to deploy the operational infrastructure that was deployed by the first UAV at the operational location; and

causing, by the control system, the third UAV to move the operational infrastructure away from the operational location and to deploy the operational infrastructure at the another operational location.

9. The method of claim 1, further comprising:

determining, by the control system, a plurality of authorized locations at which respective deployment of operational infrastructure is permitted,

wherein determining the operational location is based at least on the determined operational location being one of the determined plurality of authorized locations.

10. The method of claim 1, further comprising:

determining, by the control system, a demand for services of the group in a geographical area that includes the operational location,

wherein determining the operational location is based at least on the determined demand for services of the group in the geographical area.

11. The method of claim 1, wherein the operational infrastructure deployed at the operational location is first operational infrastructure, and wherein the control system is configured to maintain a record of operational infrastructure that has been deployed in a geographical area that includes the operational location, the method further comprising:

receiving, by the control system, a confirmation that the first operational infrastructure has been deployed at the operational location; and

in response to receiving the confirmation, the control system modifying the record to indicate that the first operational infrastructure has been deployed at the operational location within the geographical area.

12. The method of claim 11, further comprising:

based at least on the modified record, making a determination, by the control system, that a current location of the second UAV is threshold proximate to the first operational infrastructure deployed at the operational location,

wherein causing the second UAV to charge the battery of the second UAV using the first operational infrastructure deployed at the operational location is based at least on the determination.

13. An unmanned aerial vehicle (UAV) system comprising:

a group of UAVs, wherein the group of UAVs includes at least (i) a first UAV of a first type configured to deploy operational infrastructure and (ii) a second UAV of a second type configured to carry out a task other than deployment of operational infrastructure; and

a control system configured to:

determine an operational location at which to deploy operational infrastructure, wherein deployment of operational infrastructure enables charging of a battery of a UAV from the group of UAVs, and wherein the control system is configured to determine the operational location at which to deploy the operational infrastructure by

determining the operational location based on a round trip distance between the operational location and an item delivery location being less than a flight range of the second UAV;

cause the first UAV to deploy operational infrastructure at the operational location; and

cause the second UAV to charge a battery of the second UAV using the operational infrastructure deployed by the first UAV at the operational location.

14. The UAV system of claim 13, wherein the operational infrastructure deployed at the operational location comprises a ground charging system that includes one or more of the following: (i) a charging interface configured to connect to a universal power interface, (ii) a solar panel, or (iii) an energy storage device.

15. The UAV system of claim 13, wherein the group of UAVs also includes a third UAV of the first type configured to deploy operational infrastructure, and wherein the control system is further configured to:

determine another operational location at which to deploy another operational infrastructure, wherein deployment of the another operational infrastructure enables charging of a battery of a UAV from the group of UAVs; and

cause the third UAV to deploy the another operational infrastructure at the another operating location.

16. The UAV system of claim 13, wherein the control system is further configured to:

determine another operational location at which to deploy the operational infrastructure that was deployed by the first UAV at the operational location; and

cause the first UAV to move the operational infrastructure away from the operational location and to deploy the operational infrastructure at the another operational location.

17. The UAV system of claim 13, wherein the group of UAVs also includes a third UAV of the first type configured to deploy operational infrastructure, and wherein the control system is further configured to:

determine another operational location at which to deploy the operational infrastructure that was deployed by the first UAV at the operational location; and

cause the third UAV to move the operational infrastructure away from the first operational location and to deploy the operational infrastructure at the another operational location.

18. A non-transitory computer readable medium having stored therein instructions executable by one or more processors to cause a control system to perform functions comprising:

determining an operational location at which to deploy operational infrastructure, wherein deployment of operational infrastructure enables charging of a battery of an unmanned aerial vehicle (UAV) from a group of UAVs, wherein the group of UAVs includes at least (i) a first UAV of a first type configured to deploy operational infrastructure and (ii) a second UAV of a second type configured to carry out a task other than deployment of operational infrastructure, and wherein determining the operational location at which to deploy the operational infrastructure comprises determining the operational location based on a round trip distance between the operational location and an item delivery location being less than a flight range of the second UAV;

causing the first UAV to deploy operational infrastructure at the operational location; and

causing the second UAV to charge a battery of the second UAV using the operational infrastructure deployed by the first UAV at the operational location.

19. The non-transitory computer readable medium of claim 18, wherein the operational infrastructure deployed at the operational location comprises a ground charging system that includes one or more of the following: (i) a charging interface configured to connect to a universal power interface, (ii) a solar panel, or (iii) an energy storage device.

20. The method of claim 10, wherein determining the demand for services of the group of UAVs comprises determining the demand for services based on a population density in one or more sub areas of the geographic area.