What is claimed is:

1. A suspended aerial vehicle system, comprising:

a mothership, wherein the mothership is a rotorcraft such that the mothership generates thrust via thrusters of the mothership~~an unducted rotor allowing vertical takeoff and landing~~;

an aerial vehicle, wherein the aerial vehicle is a rotorcraft such that the aerial vehicle generates thrust via thrusters of the aerial vehicle~~an unducted rotor allowing vertical takeoff and landing~~, that is physically connected to the mothership by a supporting line, wherein the supporting line is part of a winch system that can actuate to adjust the length of the supporting line; and

a controller configured to detect a wind condition on the aerial vehicle and determine a wind response,

wherein determining a wind response comprises coordinating between adjusting a magnitude and a lift direction of the thrusters of the aerial vehicle ~~rotor~~ and adjusting a length and an angle of the supporting line in combination,

wherein adjusting the length and angle of the supporting line comprises directing the winch system to assume a majority of a vertical load of the aerial vehicle by winding in the supporting line to coordinate tension within the supporting line, and

wherein adjusting a magnitude and a lift direction of the thrusters of the aerial vehicle ~~rotor~~ comprises directing the thrusters of the aerial vehicle ~~rotor~~ to produce a non-vertical thrust to negate a force created by the wind condition.

2. The suspended aerial vehicle system of claim 1, wherein the mothership has both (i) lifting surfaces and propeller characteristic of a fixed wing aircraft and (ii) rotors characteristic of a rotorcraft.

3. The suspended aerial vehicle system of claim 1 or 2, wherein the positioning of the aerial vehicle further comprises the controller configured to coordinate a variable thrust availability in non-vertical axes with a supporting line angle and a supporting line length.

4. The suspended aerial vehicle system of any one of the preceding claims, wherein the mothership supports the weight of the aerial vehicle through the supporting line.

5. The suspended aerial vehicle system of any one of the preceding claims, wherein the controller coordinates between the magnitude and the lift direction of the thrusters of the aerial vehicle ~~rotor~~ and the length and the angle of the supporting line in combination to position the aerial vehicle at any point within an envelope, wherein the envelope is a sphere that encircles the winch system at a maximum length of the supporting line.

6. The suspended aerial vehicle system of any one of the preceding claims, further comprising a second aerial vehicle physically connected to the mothership.

7. The suspended aerial vehicle system of any one of the preceding claims, wherein the position maintained by the aerial vehicle is static relative to a fixed reference point.

8. The suspended aerial vehicle system of claim 7, wherein the fixed reference point is located on the mothership.

9. The suspended aerial vehicle system of claim 8, wherein coordinating the mothership, aerial vehicle, and winch system comprises varying characteristics of a thrust produced by thrusters onboard the aerial vehicle, varying the length of the supporting line, and managing ~~the~~ a flight pattern of the mothership.

10. A system for controlling a suspended aerial vehicle system, comprising:

a controller configured to:

receive information regarding a wind condition on an aerial vehicle, wherein the aerial vehicle is a rotorcraft such that the aerial vehicle generates thrust via thrusters of the aerial vehicle~~an unducted rotor allowing vertical takeoff and landing~~;

determine a wind response for the aerial vehicle;

determine adjustments that need to be made to the length of a supporting line attached to the aerial vehicle to assume a majority of the vertical load of the aerial vehicle in the supporting line;

determine adjustments that need to be made to a thruster of the thrusters ofon the aerial vehicle to produce a nonvertical thrust, wherein adjustments comprise a magnitude and a lift direction of the thrusters of the aerial vehiclerotor, wherein the lift direction is adjusted by actuating an angle of the thrusters of the aerial vehicle rotor relative to the supporting line; and

coordinate manipulation of the supporting line by a mechanical device and manipulation of the thrusters of the aerial vehicle thruster in combination in order to negate the effect of the wind condition on a position of the aerial vehicle.

11. The system for controlling a suspended aerial vehicle system of claim 10, wherein the wind response is determined on a continuous basis.

12. The system for controlling a suspended aerial vehicle system of claim 10 or 11, wherein the controller is configured to coordinate between the magnitude and the lift direction of the thrusters of the aerial vehicle rotor and the length and the angle of the supporting line in combination to position the aerial vehicle at any point within an envelope, wherein the envelope is a sphere that encircles the mechanical device at a maximum length of the supporting line.

13. The system for controlling a suspended aerial vehicle system of any one of claims 10 to 12, wherein the aerial vehicle is connected to a mothership via the supporting line.

14. The system for controlling a suspended aerial vehicle system of claim 13, wherein the mothership is a rotorcraft such that the mothership generates thrust via thrusters of the mothershipan unducted rotor allowing vertical takeoff and landing.