

CLAIMS

1. A system for identifying and responding to problem conditions for a plurality of aerial vehicles, the system comprising one or more processors configured to:
 - receive, from an aerial vehicle of the plurality of aerial vehicles, sensor feedback;
 - identify a problem condition using the sensor feedback;
 - determine a mitigation response for the problem condition, the mitigation response relating to a mission assigned to the aerial vehicle; and
 - send the mitigation response to the aerial vehicle in order to cause the aerial vehicle to maneuver according to the mitigation response and thereby automatically respond to the problem condition.
2. The system of claim 1, wherein the one or more processors are part of one or more server computing devices remote from the aerial vehicle.
3. The system of claim 2, further comprising the aerial vehicle, and wherein the aerial vehicle is an unmanned aerial vehicle.
4. The system of claim 3, further comprising the plurality of aerial vehicles, and wherein the server computing devices are configured to identify one or more problem conditions of one or more other aerial vehicles of the plurality of aerial vehicles.
5. The system of claim 1, wherein the one or more processors are further configured to use the problem condition to estimate a remaining flight time for the aerial vehicle, and wherein the estimated remaining flight time is used to determine the mitigation response.
6. The system of claim 1, wherein the one or more processors are further configured to use the problem condition to estimate a remaining flight distance for the aerial vehicle, and wherein the estimated remaining flight distance is used to determine the mitigation response.
7. The system of claim 1, wherein the problem condition corresponds to a current problem with the aerial vehicle.
8. The system of claim 1, wherein the problem condition corresponds to an expected future problem with the aerial vehicle.
9. The system of claim 1, wherein identifying the problem condition includes determining whether the sensor feedback meets a threshold value for the problem condition.

10. The system of claim 1, wherein identifying the problem condition includes determining whether the sensor feedback meets a combination of two or more threshold value for the problem condition.

11. The system of claim 1, wherein identifying the problem condition includes inputting the sensor feedback into a model that outputs the problem condition.

12. The system of claim 1, wherein the one or more processors are further configured to, after identifying the problem condition, flagging the aerial vehicle for inspection.

13. The system of claim 1, wherein the one or more processors are further configured to determine the mitigation response further based on a severity of the problem condition.

14. The system of claim 1, wherein the problem condition corresponds to a broken propeller.

15. The system of claim 1, wherein the problem condition corresponds to a battery failure.

16. The system of claim 1, wherein the problem condition corresponds to a motor failure.

17. A method of identifying and responding to problem conditions for a plurality of aerial vehicles, the method comprising:

receiving, by one or more processors of one or more server computing devices, from an aerial vehicle of the plurality of aerial vehicles, sensor feedback;

identifying, by the one or more processors, a problem condition using the sensor feedback;

determine, by the one or more processors, a mitigation response for the problem condition, the mitigation response relating to a mission assigned to the aerial vehicle; and

send, by the one or more processors, the mitigation response to the aerial vehicle in order to cause the aerial vehicle to maneuver according to the mitigation response and thereby automatically respond to the problem condition.

18. The method of claim 17, further comprising using, by the one or more processors, the problem condition to estimate a remaining flight time for the aerial vehicle, and wherein the estimated remaining flight time is used to determine the mitigation response.

19. The method of claim 17, wherein identifying the problem condition includes determining whether the sensor feedback meets a threshold value for the identified problem condition.

20. The method of claim 17, wherein identifying the problem condition includes determining whether the sensor feedback meets a combination of two or more threshold value for the identified problem condition.