CLAIMS

1. A method of controlling a robot configured to clean a hull of a vessel whilst travelling over said hull, the method comprising:

receiving input data;

during cleaning being performed by the robot, detecting that said cleaning being performed by the robot is to be paused based on determining, from the input data, that the robot is at risk of damage;

in response to said detecting that cleaning being performed by the robot is to be paused, outputting a pause cleaning signal indicating that said cleaning is to be paused;

receiving further input data;

whilst said cleaning is paused, detecting that cleaning performed by the robot is to be restarted based on determining, from the further input data, that the robot is no longer at risk of damage; and

in response to said detecting that cleaning being performed by the robot is to be restarted, outputting a restart cleaning signal indicating that said cleaning is to be restarted.

2. The method of claim 1, wherein the input data comprises location information defining a geographical location of the vessel and the method comprises determining that the robot is at risk of damage based on the location information.

3. The method of claim 2, wherein the method comprising:

querying a geographical model with the geographical location of the vessel; and

determining that the robot is at risk of damage based on the geographical model defining that no cleaning is to be performed at said geographical location of the vessel.

4. The method of any preceding claim, wherein the input data comprises location information defining a location of the robot on the hull of the vessel, the method comprising:

determining, whilst the vessel is stationary, that the vessel will start to move within a predetermined time period;

determining that the robot is at risk of damage based on the location of the robot on the hull of the vessel and said determining that the vessel will start to move within the predetermined time period.

5. The method of claim 4, wherein the input data comprises an indication that an anchor of the vessel is in a raised state, and said determining that the vessel will start to move within the predetermined time period is based on said indication.

6. The method of claim 4, wherein the input data comprises vibration data indicative of an operating state of an engine of the vessel, and said determining that the vessel will start to move within the predetermined time period is based on said vibration data.

7. The method of any of claims 2 to 6, wherein the location information is received from a location sensor located on the robot or on the vessel.

8. The method of any of claims 2 to 6, wherein the location information is received from a remote computing device external to said robot.

9. The method of any preceding claim, wherein the input data comprises environmental data relating to an environment of the vessel, and the method comprises determining that the robot is at risk of damage based on the environmental data.

10. The method of claim 9, wherein the environmental data comprises a speed of currents in an aquatic environment of the vessel, and the method comprises determining that the robot is at risk of damage based on the speed of the currents exceeding a predetermined aquatic current threshold.

11. The method of claim 9 or 10, wherein the environmental data comprises a temperature, and the method comprises determining that the robot is at risk of damage based on the temperature being below a predetermined temperature threshold.

12. The method of claim 9 or 10, wherein the environmental data comprises a temperature, and the method comprises determining that the robot is at risk of damage based on the temperature being above a predetermined temperature threshold.

13. The method of any of claims 9 to 12, wherein the environmental data comprises wave information and the method comprises determining that the robot is at risk of damage based on an average wave height exceeding a predetermined wave height threshold.

14. The method of any of claims 9 to 13, wherein the environmental data comprises a depth of water below the vessel, and the method comprises determining that the robot is at risk of damage based on the depth being below a predetermined depth threshold.

15. The method of any of claims 9 to 14, wherein the environmental data is received from at least one of:

one or more sensors on the robot;

one or more sensors on the vessel;

a remote computing device external to said robot; and

a satellite.

16. The method of any preceding claim, wherein whilst said cleaning is paused, the robot is configured to be stationary.

17. The method of any of claims 1 to 15, wherein upon detecting that cleaning being performed by the robot is to be paused, the robot is configured to move to a docking station on said vessel.

18. The method of any preceding claim, wherein the method is performed by a monitoring module on said robot, and wherein upon detecting that cleaning being performed by the robot is to be paused, the method comprises outputting the pause cleaning signal to a cleaning module on the robot to pause said cleaning; and upon detecting that cleaning performed by the robot is to be restarted, the method comprises outputting a restart cleaning signal to the cleaning module on the robot to restart said cleaning.

19. The method of any of claims 1 to 17, wherein the method is performed by a monitoring module on said robot, and wherein upon detecting that cleaning being performed by the robot is to be paused, the method comprises outputting the pause cleaning signal to a remote computing device external to said robot for validation by a user; and upon detecting that cleaning performed by the robot is to be restarted, the method comprises outputting a restart cleaning signal to the remote computing device external to said robot for validation by the user.

20. The method of any of claims 1 to 17, wherein the method is performed by a monitoring module on a remote computing device external to said robot.

21. The method of claim 20, wherein upon detecting that cleaning being performed by the robot is to be paused, the method comprises automatically transmitting the pause cleaning signal to a cleaning module on the robot to pause said cleaning; and upon detecting that cleaning performed by the robot is to be restarted, the method comprises automatically transmitting the restart cleaning signal to the cleaning module on the robot to restart said cleaning.

22. The method of claim 20, wherein upon detecting that cleaning being performed by the robot is to be paused, the method comprises outputting the pause cleaning signal to a user for validation before transmitting the pause cleaning signal to a cleaning module on the robot to pause said cleaning; and upon detecting that cleaning performed by the robot is to be restarted, the method comprises outputting the restart cleaning signal to a user for validation before transmitting the restart cleaning signal to the cleaning module on the robot to restart said cleaning.

23. A computer-readable storage medium comprising instructions which, when executed by a processor, cause the processor to carry out the method of any preceding claim.

24. A robot configured to clean a hull of a vessel whilst travelling over said hull, the robot comprising a processor configured to:

receive input data;

during cleaning being performed by the robot, detect that said cleaning being performed by the robot is to be paused based on determining, from the input data, that the robot is at risk of damage;

in response to said detecting that cleaning being performed by the robot is to be paused, output a pause cleaning signal indicating that said cleaning is to be paused

receive further input data;

whilst said cleaning is paused, detect that cleaning performed by the robot is to be restarted based on determining, from the further input data, that the robot is no longer at risk of damage; and

in response to said detecting that cleaning being performed by the robot is to be restarted, output a restart cleaning signal indicating that said cleaning is to be restarted.

25. The robot of claim 24, wherein the processor is configured to output the pause cleaning signal to a cleaning module on the robot to pause said cleaning.

26. The robot of claim 24, wherein the processor is configured to output the pause cleaning signal to a remote computing device external to said robot for validation by a user.