CLAIMS:

1. A controller for a dynamic positioning system, the controller or dynamic positioning system being configured to determine a position of a vessel relative to a target position and to control a propulsion system of the vessel based on the determined position of the vessel relative to the target position, and wherein the controller is configured to:

   monitor a property of at least part of a riser extending from the vessel; and

   adjust the control of the propulsion system accordingly by limiting an operational power characteristic of the propulsion system.

2. The controller of claim 1 wherein the power characteristic that is additionally limited is a power characteristic determined based on the position of the vessel relative to the target position.

3. The controller of claim 1 or claim 2, wherein the controller is configured such that the control of the propulsion system is adjusted when the property of at least part of the riser is within an associated threshold or operational range.

4. The controller of any preceding claim wherein the controller is configured such that the control of the propulsion system is adjusted by selectively limiting the power characteristic of the propulsion system if the power demanded by the propulsion system is above a power threshold.

5. The controller according to any preceding claim, wherein the controller is configured such that the control of the propulsion system is adjusted by additionally limiting the power characteristic of the propulsion system determined based on the position of the vessel relative to the target position when the property of the riser determined by the controller is within the associated threshold or operational limit and when the amount of power demanded by the propulsion system is above a power threshold.

6. The controller according to any preceding claim, wherein the property of the riser supported by the vessel comprises one or more of: an angle, orientation, inclination, bending, flex, stress or strain of at least part or all of the riser

and optionally the property comprises an angle, orientation, inclination, bending, flex, stress or strain of at least one flex joint of the riser.

7. The controller according to any preceding claim, wherein the property of the riser is measured by a plurality of control sensors comprising at least two control sensors that are duplicates of each other and the controller is configured to adjust the control of the propulsion system on the basis of signals from the at least two control sensors.

8. The controller according to any preceding claim, configured such that, when the property of the riser is outwith the threshold or operational range, then the controller controls the propulsion system according to the difference between the determined position of the vessel and the target position without the adjustment or limiting of the propulsion system.

9. The controller according to any preceding claim, wherein the adjustment to the control of the propulsion system is time dependant.

10. The controller according to any preceding claim, wherein the power characteristic comprises a power demanded or a rate of increase in power demanded by the propulsion system.

11. The controller according to any preceding claim configured to automatically disconnect the riser, and/or provide an alert to an operator to disconnect the riser, if the monitored property of the riser exceeds a disconnection threshold.

12. The controller according to any preceding claim, wherein the position of a vessel is at least partially determined using variations in tension in a taut line fixed at one end to a stationary point.

13. The controller according to any preceding claim, wherein the controller is configured such that the operation of the controller to adjust the control of the propulsion system can be manually overridden, switched off or cancelled.

14. The controller according to claim 3 or any claim dependent thereon, wherein the controller is configured to increase the associated threshold or operational range when the vessel current increases or is above a current threshold.

15. The controller according to any preceding claim, wherein the controller is or comprises a drive-off prevention controller configured to override or modify the control of the dynamic positioning system by a dynamic positioning system controller.

16. The controller according to claim 15, wherein the dynamic positioning system controller is configured to determine the position of the vessel relative to the target position and to determine a control the propulsion system of the vessel based on the determined position of the vessel relative to the target position and the drive-off prevention controller is configured to monitor the property of at least the part of the riser; and adjust the control of the propulsion system determined by the dynamic positioning system controller according to the monitored property of the riser.

17. A method for dynamically positioning a vessel, the method comprising:

determining a position of a vessel relative to a target position;

controlling a propulsion system of the vessel based on the determined position of the vessel relative to the target position;

monitoring a property of a riser; and

adjusting the control of the propulsion system based on the one or more properties of the riser by limiting an operational power characteristic of the propulsion system.

18. A drive-off prevention controller for a dynamic positioning system, wherein:

the dynamic positioning system is configured to determine a position of a vessel relative to a target position and to control a propulsion system of the vessel based on the determined position of the vessel relative to the target position; and

the drive-off prevention controller is configured to monitor a property of at least part of a riser extending from the vessel; and adjust the control of the propulsion system accordingly by limiting an operational power characteristic of the propulsion system.