CLAIMS:

1. A hydrofoil system for a waterborne vessel, the hydrofoil system comprising

- a controller;
- a foil for engagement with the waterborne vessel, the foil comprising a plurality of adjustment members operable to vary the lift characteristics of the waterborne vessel;
- a propeller;
- an engine and gearbox located adjacent the foil and operable/in mechanical communication with the propeller; and
- a plurality of sensors in electrical communication with the controller, each sensor configured to monitor flight parameters of the waterborne vessel and generate measured flight parameter data,
- wherein the controller is in communication with the adjustment members, the engine and the sensors and wherein the controller is configured to receive measured flight parameter data from the sensors and to control the operation of the engine and the position of the adjustment members in dependence upon the received measured flight parameter data.

2. A hydrofoil system as claimed in claim 1, further comprising a battery system in electrical communication with the controller and the engine and operable by the controller to provide power to the engine.

3. A hydrofoil system as claimed in claim 1 or claim 2, wherein each of the adjustment members is operable to vary one or more of pitch, roll, heave and yaw of the waterborne vessel.

4. A hydrofoil system as claimed in any one of claims 1 to 3, wherein each adjustment member comprises a flap and an actuator, wherein the flap is moveable relative to the foil on activation of the actuator by the controller.

5. A hydrofoil system as claimed in claim 4, wherein the actuators are integrated within the foil.

6. A hydrofoil system as claimed in claim 4 or claim 5, wherein each of the plurality of flaps is independently adjustable.

7. A hydrofoil system as claimed in any one of claims 4 to 6, wherein the plurality of flaps comprises at least one set of two aligned flaps.

8. A hydrofoil system as claimed in any preceding claim, wherein the foil comprises a water-tight casing, and wherein the engine and gearbox are arranged within the water-tight casing.

9. A hydrofoil system as claimed in claim 8, wherein the engine and gearbox are in thermal contact with the water-tight casing.

10. A hydrofoil system as claimed in claim 8 or claim 9, wherein the propeller is located adjacent the gearbox, distal to the engine.

11. A hydrofoil system as claimed in any preceding claim, wherein the measured flight parameter data comprises one or more selected from the group comprising acceleration data, vessel position data (pitch, heave, yaw, roll), actuator positional data, external environmental factors, and the environment the vessel is moving in.

12. A hydrofoil system as claimed in any preceding claim, wherein the controller is located within a hull of the waterborne vessel and the foil is located beneath a floating waterline on an exterior of the hull.

13. A hydrofoil system as claimed in claim 14, further comprising a battery system in electrical communication with the foil and operable to provide power to the engine alone or to both the engine and the actuator.

14. A waterborne vessel including a hydrofoil system as claimed in any preceding claim.