CLAIMS

1. A system for replacing electrolyte in a Metal-Air battery, comprising:

a first tank for holding off-board electrolyte;

an intermediate electrolyte tank;

a waste electrolyte tank;

a second tank for receiving on-board electrolyte;

fluid conduits to connect the first tank and the second tank to the battery;

a sensor to measure a property of the on-board electrolyte; and

a controller to control transfer of the on-board electrolyte from the battery to the intermediate electrolyte tank or to the second tank, control transfer of the on-board electrolyte from the intermediate electrolyte tank to the second tank when the property of the on-board electrolyte exceeds a threshold and to transfer the on-board electrolyte to the waste electrolyte tank otherwise, and to control transfer of off-board electrolyte from the first tank to the battery,

wherein the property is at least one of: a chemical composition of the on-board electrolyte, a temperature of the on-board electrolyte, an amount of solid particles in the on-board electrolyte, a resistivity of the on-board electrolyte, a pH of the on-board electrolyte and the momentary amount of on-board electrolyte in the battery, each having a corresponding threshold value.

2. A system according to claim 1, wherein the first tank includes a heating element and the controller is configured to control a temperature of the off-board electrolyte to be in a predetermined temperature range.

3. A system according to claim 1, further comprising a third tank for holding heated off-board electrolyte, wherein the third tank includes a heating element and the controller is configured to control a temperature of the off-board electrolyte in the third tank to be in a predetermined temperature range.

4. A system according to any of the preceding claims, further comprising a sensor to indicate if the connection of the conduits to the battery is safe.

5. A system according to any of the preceding claims, further comprising a communication unit to communicate with a controller of the battery to receive indication of the status of the electrolyte in the battery.

6. A system according to claim 4, wherein the controller is configured to prevent transfer of electrolyte between the system and the battery when the indication from the sensor is not "safe".

7. A system according to claim 1 wherein the controller is configured to transfer on-board electrolyte from the battery to the intermediate electrolyte tank for examination of the quality of the electrolyte according to the thresholds.

8. A system according to any one of the preceding claims, further comprising:

a first valve controlling transfer of on-board electrolyte from the battery to the second tank;

a second valve controlling transfer the off-board electrolyte from the first tank to the battery.

9. A system according to claim 3, further comprising:

a first valve controlling transfer of cold on-board electrolyte from the battery to the second tank; and

a second valve controlling transfer of heated off-board electrolyte from the third tank to the battery.

10. A system according to claim 1, further comprising:

a third valve controlling transfer of on-board electrolyte from the battery to the intermediate electrolyte tank;

a fourth valve controlling transfer of on-board electrolyte from the intermediate electrolyte tank to the second tank; and

fifth valve controlling transfer of on-board electrolyte from the intermediate electrolyte tank to the waste electrolyte tank.

11. A system according to any of the preceding claims, further adapted to connect with more than one battery.