CLAIMS

[Claim 1] A charging and refuelling station for an autonomous cleaning robot including;

a LIDAR reflective profile provided on the charging and refuelling station for guiding a LIDAR system of the autonomous cleaning robot;

a charging mechanism including a sprung mount resiliently supported on the charging and refuelling station, a swivel mount pivotally supported on the sprung mount, the swivel mount supporting contact plates for contacting charging contact plates of the autonomous cleaning robot when docked at the station;

a water exchange system including a tap for fresh water refilling of the autonomous cleaning robot, and a flow sensor for detecting water flow to the autonomous cleaning robot, and any surge in the water flow thereto; and

a draining system including a drain tank for receiving water draining from the autonomous cleaning robot, at least one float sensor for sensing water level within the drain tank, and a rinsing system including at least one rinsing nozzle for rinsing the drain tank.

[Claim 2] A charging and refuelling station for an autonomous cleaning robot according to claim 1, wherein the sprung mount is resiliently mounted to a structural chassis of the charging and refuelling station via a spring assembly to allow for movement of the sprung mount towards and away from the chassis when force is applied by the cleaning robot on the swivel mount.

[Claim 3] A charging and refuelling station for an autonomous cleaning robot according to claim 2, wherein the spring assembly comprises at least one compression spring supported on a linear shaft extending from the structural chassis.

[Claim 4] A charging and refuelling station for an autonomous cleaning robot according to claim 3, wherein the sprung mount is further supported by at least one linear bush and stopper washer.

[Claim 5] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, further comprising at least one linear rail and carriage for reducing flexure and play of the charging mechanism during movement thereof.

[Claim 6] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, wherein water is drained by gravity from the drain tank.

[Claim 7] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, wherein said float sensors are located at different depths within the drain tank, to thereby control an opening and closing of a valve controlling draining of the water from the autonomous cleaning robot.

[Claim 8] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, the rinsing system comprising two of the rinsing nozzles including a 3-way flushing nozzle and a fan nozzle, and a dual outlet solenoid valve for controlling water flow to each of the rinsing nozzles.

[Claim 9] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, further comprising at least one rain sensor provided on the station for sensing external water or water leaks within the station.

[Claim 10] A charging and refuelling station for an autonomous cleaning robot according to claim 9, comprising a plurality of the rain sensors, each said rain sensor being located at a different position within the charging and refuelling station.

[Claim 11] A charging and refuelling station for an autonomous cleaning robot according to any one of the preceding claims, wherein the LIDAR reflective profile is a V shaped profile.