CLAIMS

1. A robotic vehicle chassis, comprising:

a first chassis section;

a second chassis section;

a drive wheel mounted to one of the first and second chassis sections;

an omni-wheel mounted to the other of the first and second chassis sections; the omni-wheel being mounted at an angle orthogonal with respect to the drive wheel;

a hinge joint connecting to the first chassis section such that the first and second chassis sections are capable of rotation with respect to each other in at least a first direction;

in which the hinge joint rotates in response to the curvature of a surface the vehicle is traversing;

at least a first magnet included within the drive wheel; and

at least a second magnet included within the omni-wheel,

in which the at least first and second magnets maintain an attractive force between drive wheel and the surface and the omni-wheel and the surface, respectively.

2. A robotic vehicle chassis according to Claim 1, in which the first and second chassis sections include separate power sources and motors for driving the drive wheel and the omni-wheel separately.

3. A robotic vehicle chassis according to Claim 1, in which the omni-wheel includes a first and second set of rollers in which the rollers maintain at least two points of contact with the surface.

4. A robotic vehicle chassis according to Claim 3, in which the first and second set of rollers are supported by a first and second hub, respectively, where the first and second hubs include the at least first magnet.

5. A robotic vehicle chassis according to Claim 1, in which the drive wheel includes a first and second drive hub, in which the first and second drive hubs include the at least second magnet.

6. A robotic vehicle chassis according to Claim 5, in which the contact surfaces of the drive hubs are curved such that each side of the driving wheel contacts the surface at a single point.

7. A robotic vehicle chassis according to Claim 6, in which points of contact of the drive hubs are textured.

8. A robotic vehicle chassis according to Claim 7, in which points of contact of the drive hubs are knurled.

9. A robotic vehicle chassis according to Claim 6, in which points of contact of the drive hubs are coated.

10. A robotic vehicle chassis according to Claim 9, in which points of contact of the drive hubs have a rubber coating.

11. A robotic vehicle chassis according to Claim 9, in which points of contact of the drive hubs have a polyurethane coating.

12. A robotic vehicle chassis according to Claim 1, in which a single power source provides power to the first and second chassis sections and motors for driving the drive wheel and the omni-wheel.

13. A robotic vehicle chassis according to Claim 1, in which the first and second chassis sections are configured such that the first direction of rotation is parallel to the axis of rotation of the drive wheel.

14. A robotic vehicle chassis according to Claim 1, in which the hinge joint includes at least one rotation stop.