What is claimed is:

1. A mobile robot capable of performing surface transition on ferromagnetic surfaces, the robot comprises:

a chassis; and

at most three wheel sets respectively being at least a driven wheel which is a front wheel, at least a first non-driven wheel which is a rear wheel, and at least a second non-driven wheel,

wherein the driven wheel is rotatably mounted to the chassis and operative to drive the chassis to transit from a first ferromagnetic surface to a second ferromagnetic surface which is non-parallel thereto,

wherein the first and the second non-driven wheel are rotatably mounted to the chassis,

wherein rotation axes of the driven wheel and the first non-driven wheel are mutually spaced apart in a lengthwise direction,

wherein rotation axes of the first and the second non-driven wheel are mutually spaced apart in an elevation direction which is orthogonal to the lengthwise direction, and

wherein a distance, along the lengthwise direction, between an outer edge of the second non-driven wheel and the rotation axis of the driven wheel is greater than a distance, along the lengthwise direction, between an outer edge of the first non-driven wheel and the rotation axis of the driven wheel, such that the second non-driven wheel is arranged to be in magnetic adhesion contact with the first ferromagnetic surface when the driven wheel and the first non-driven wheel are in concurrent magnetic adhesion contact with the second ferromagnetic surface.

2. The mobile robot of claim 1, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart in the lengthwise direction.

3. The mobile robot of any one of claim 1 to claim 2, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart by a distance greater than a radius of the first non-driven wheel.

4. The mobile robot of any one of claim 1 to claim 2, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart by a distance greater than a diameter of the first non-driven wheel.

5. The mobile robot of claim 1, wherein a diameter of the second non-driven wheel is greater than a diameter of the first non-driven wheel.

6. The mobile robot of any one of claim 1 to claim 5, wherein the first and the second ferromagnetic surface form an angle being one of an acute angle, an obtuse angle and a right angle.

7. The mobile robot of any one of claim 1 to claim 6, wherein the first and the second ferromagnetic surface are part of an interior of a confined space structure.

8. A method of operating mobile robot capable of performing surface transition on ferromagnetic surfaces, the method comprises:

performing, by a mobile robot having a chassis and at most three wheel sets respectively being at least a driven wheel which is a front wheel, at least a first non-driven wheel which is a rear wheel, and at least a second non-driven wheel, surface transition from a first ferromagnetic surface to a second ferromagnetic surface which is non-parallel thereto by:

rotating the driven wheel to move the driven wheel from the first to the second ferromagnetic surface and to actuate the first and the second non-

driven wheel rotate, wherein the driven wheel, the first and the second non-driven wheel are rotatably mounted to the chassis of the mobile robot;

detaching the first non-driven wheel from the first ferromagnetic surface and landing the first non-driven wheel onto the second ferromagnetic surface;

while the driven wheel and the first non-driven wheel are in magnetic adhesion contact with the second ferromagnetic surface, disposing the second non-driven wheel in magnetic adhesion contact with the first ferromagnetic surface at a location therein, wherein a minimum distance between the location and the second ferromagnetic surface is greater than a radius of the first non-driven wheel; and

detaching the second non-driven wheel from the first ferromagnetic surface.

9. The method of claim 8,

wherein rotation axes of the driven wheel and the first non-driven wheel are mutually spaced apart in a lengthwise direction,

wherein rotation axes of the first and the second non-driven wheel are mutually spaced apart in an elevation direction which is orthogonal to the lengthwise direction.

10. The method of claim 9, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart in the lengthwise direction.

11. The method of any one of claim 9 to claim 10, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart by a distance greater than a radius of the first non-driven wheel.

12. The method of any one of claim 9 to claim 10, wherein the rotation axes of the first and the second non-driven wheel are mutually spaced apart by a distance greater than a diameter of the first non-driven wheel.

13. The method of claim 9, wherein a diameter of the second non-driven wheel is greater than a diameter of the first non-driven wheel.

14. The method of any one of claim 8 to claim 13, wherein the first and the second ferromagnetic surface form an angle being one of an acute angle, an obtuse angle and a right angle.

15. The method of any one of claim 8 to claim 14, wherein the first and the second ferromagnetic surface are part of an interior of a confined space structure.