CLAIMS

1. An amusement park ride system, comprising:

a ride vehicle;

a ride control system configured to track a location of the ride vehicle on a ride path; and a haptic feedback system comprising:

a screen comprising a surface modifying component, wherein the screen is positioned on the ride vehicle; and

a control system comprising one or more memory devices and one or more processors, wherein the one or more memory devices store instructions that, when executed by the one or more processors, cause the haptic feedback system to:

receive location data indicative of the location of the ride vehicle on the ride path from the ride control system;

convert the location data from the ride control system into a tactile representation of scenery surrounding the ride vehicle based on stored scenery data correlating to the location; and

output the tactile representation of the scenery surrounding the ride vehicle on a surface of the screen using the surface modifying component.

2. The amusement park ride system of claim 1, comprising a tracking device disposed on the ride vehicle and configured to transmit a signal to the ride control system, wherein the signal is indicative of the location of the ride vehicle.

3. The amusement park ride system of claim 1, wherein the screen of the haptic feedback system is removably coupled to the ride vehicle.

4. The amusement park ride system of claim 1, wherein the screen of the haptic feedback comprises a plurality of windows disposed around a portion of the ride vehicle.

5. The amusement park ride system of claim 1, wherein the surface modifying component comprises a plurality of pegs, wherein each peg of the plurality of pegs is individually actuated.

6. The amusement park ride system of claim 1, wherein the surface modifying component comprises a plurality of cells, wherein each cell of the plurality of cells comprises a fluid and is individually actuated.

7. The amusement park ride system of claim 6, wherein each cell of the plurality of cells is configured to be actuated by the fluid, wherein the fluid expands an outer surface of individual cells of the plurality of cells to create bumps on the surface of the screen.

8. The amusement park ride system of claim 6, wherein a viscosity of the fluid is increased in an actuated cell of the plurality of cells to create a bump on the surface of the screen.

9. The amusement park ride system of claim 1, wherein the surface modifying component comprises an electroactive polymer (EAP), carbon nanotubes, a piezoelectric material, a magnetic material, a light emitting diode (LED), or combinations thereof.

10. A method, comprising:

receiving, at a haptic feedback system including a screen with surface modifying components, location data indicative of a location of a ride vehicle along a ride path from a ride controller of an amusement park ride;

converting the location data into tactile information representative of scenery of the amusement park ride associated with the location of the ride vehicle based on a database correlating tactile representations with locations along the ride path; and recreating the scenery of the amusement park ride at the location on an outer surface of the screen based on the tactile information by activating the surface modifying components of the screen, wherein the surface modifying components are configured to raise or lower portions of the outer surface of the screen.

11. The method of claim 10, comprising tracking the location of the ride vehicle along the ride path using a tracking device.

12. The method of claim 10, wherein the surface modifying components comprise pegs, cells, or both, and wherein each surface modifying component of the surface modifying components is configured to be individually actuated.

13. The method of claim 10, wherein the surface modifying components comprise cells with a fluid disposed therein.

14. The method of claim 13, comprising forming bumps on the outer surface of the screen that are representative of the scenery, wherein forming the bumps comprises expanding the cells with fluid when the cells are actuated.

15. The method of claim 13, comprising forming bumps on the outer surface of the screen that are representative of the scenery, wherein forming the bumps comprises increasing a viscosity of the fluid to expand the cells when the cells are actuated.

16. A haptic feedback system comprising:

a screen configured to be positioned on a ride vehicle and comprising a surface modifying component;

one or more memory devices configured to store a tactile representation of scenery corresponding to location data indicative of the location of the ride vehicle; and

one or more processor devices configured to:

receive the location data;

in response to receiving the location data, determine the tactile representation of the scenery corresponding to the location data from the one or more memory devices; and

output the tactile representation of the scenery corresponding to the location data at the surface modifying component.

17. The haptic feedback system of claim 16, wherein the surface modifying component comprises a plurality of pegs, a plurality of cells, or both, and wherein each peg of the plurality of pegs and each cell of the plurality of cells are individually actuated.

18. The haptic feedback system of claim 16, wherein the surface modifying component comprises a plurality of cells configured to receive a fluid to create bumps on an outer surface of the screen.

19. The haptic feedback system of claim 16, wherein the haptic feedback system is removably coupled to the ride vehicle.

20. The haptic feedback system of claim 16, wherein the ride vehicle comprises a docking station, and wherein the haptic feedback system is configured to couple to the docking station.