

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 a memory and a processor, wherein the memory stores instructions that, when executed by the processor, cause the haptic feedback system to convert data from the ride control system into tactile information representative of scenery surrounding the ride vehicle based on stored scenery data that is correlated to the location.
2. The system of claim 1, comprising a tracking device disposed on the ride vehicle and configured to transmit a signal to the control system, wherein the signal is indicative of the location of the ride vehicle.
3. The system of claim 1, wherein the screen of the haptic feedback system is removably coupled to the ride vehicle.
4. The 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 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 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 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 each cell of the plurality of cells to create bumps on a surface of the screen.

8. The 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 a surface of the screen.
9. The 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 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 an outer surface of the screen.
11. The method of claim 10, comprising tracking a 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. An amusement park ride system, comprising:

a haptic feedback system configured to be communicatively coupled to a ride control system of the amusement park ride and comprising:

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

a memory storing instructions configured to recreate a scenery of the amusement park ride based on a location of the ride vehicle along a ride path of the amusement park ride; and

a processor configured to execute the instructions to cause the haptic feedback system to provide haptic feedback, via the surface modifying component, that corresponds to the scenery at a particular location indicated by data from the ride control system.

17. The 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 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 system of claim 16, comprising the ride vehicle.

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