CLAIMS:

1. A ride control system, comprising:

a plurality of ride vehicles positioned within a course and configured to travel within the course, wherein each of the plurality of ride vehicles comprises:

a vehicle controller configured to control movement of a respective one of the plurality of ride vehicles;

a position tracking system configured to facilitate identification of a location of the respective one of the plurality of ride vehicles within the course; and

a vehicle transceiver in communication with the vehicle controller;

a primary controller;

a primary transceiver in communication with the primary controller; and

a primary wireless network formed by the vehicle transceiver and the primary transceiver to include at least the primary controller and the vehicle controller of each of the plurality of ride vehicles, wherein the primary controller is configured to receive data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the primary wireless network and wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide a control loop for each of the plurality of ride vehicles based on the data indicative of the location of each of the plurality of ride vehicles.

2. The ride control system of claim 1, wherein the position tracking system of each of the plurality of ride vehicles respectively includes a reader in communication with the controller of the respective ride vehicle, the reader configured to read position indicators.

3. The ride control system of claim 2, wherein the vehicle controller is configured to determine a location of the respective one of the plurality of ride vehicles based on data provided from the reader based on reading at least one position indicator.

4. The ride control system of claim 1, comprising a plurality position indicators located throughout the course, each of the position indicators corresponding to a specified location within the course.

5. The ride control system of claim 1, wherein the primary controller is configured to transmit instructions to each of the plurality of ride vehicles based on accumulated location information from all or a subset of the plurality of ride vehicles.

6. The ride control system of claim 1, wherein the position tracking system or an additional position tracking system is configured to facilitate identification of a first vehicle component location with respect to a second vehicle component.

7. The ride control system of claim 6, wherein the first vehicle component includes a rotatable seating area and the second vehicle component include a base relative to which the rotatable seating area moves.

8. The ride control system of claim 6, wherein the primary controller is configured to control a show event based on the first vehicle component location.

9. The ride control system of claim 6, wherein the primary controller is configured to control the first vehicle component location based on a show event status.

10. The ride control system of claim 1, wherein the primary controller is configured to control a show event on or proximate to the course based on the data indicative of the location of each of the plurality of ride vehicles.

11. The ride control system of claim 1, wherein the primary controller is configured to determine a maintenance status of the respective one of the plurality of ride

vehicles based on a trend of operation for the respective one of the plurality of ride vehicles.

12. The ride control system of claim 1, wherein the primary controller is configured to receive a first location of a first ride vehicle and a second location of a second ride vehicle and to generate instructions based on the first and second locations for transmission to the vehicle controller of the first ride vehicle for controlling the movement of the first ride vehicle in a manner that differs from the second ride vehicle.

13. The ride control system of claim 1, comprising additional ride vehicles in communication with the primary controller via the primary transceiver, wherein the primary controller and primary transceiver or integral.

14. The ride control system of claim 1, comprising:

a backup controller configured to receive the data indicative of the location of each of the plurality of ride vehicles from the respective ones of the plurality of ride vehicles via the primary wireless network, wherein the primary controller is configured to control one or more show elements and the backup controller is not; and

a bi-directional voting circuit configured to select between the data received by the primary controller and the backup controller.

15. The ride control system of claim 1, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide dynamic spacing buffers between ride vehicles.

16. A ride control system, comprising:

a plurality of ride vehicles positioned within a course and configured to travel within the course, wherein each of the plurality of ride vehicles comprises:

a vehicle controller configured to control movement of a respective one of the plurality of ride vehicles;

a position tracking system configured to facilitate identification of a location of the respective one of the plurality of ride vehicles within the course; and

a vehicle transceiver in communication with the vehicle controller;

a primary controller;

a primary transceiver in communication with the primary controller;

a primary wireless network formed by the vehicle transceiver and the primary transceiver to include at least the primary controller and the vehicle controller of each of the plurality of ride vehicles, wherein the primary controller is configured to receive a first set of data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the primary wireless network;

a backup controller in communication with the primary controller;

a backup transceiver in communication with the backup controller;

a backup wireless network formed by the vehicle transceiver and the backup transceiver to include at least the backup controller and the vehicle controller of each of the plurality of ride vehicles, wherein the backup controller is configured to receive a second set of data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the backup wireless network; and

a bi-directional voting circuit configured to compare the first set of data and the second set of data, and to select between the first set of data and the second set of data, wherein the primary controller or the backup controller, and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide a control loop for each of the plurality of ride vehicles based on one of the first set or the second set of data indicative of the location of each of the plurality of ride vehicles.

17. The ride control system of claim 16, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate

to provide the control loop for each of the plurality of ride vehicles based on the first set or the second set of data.

18. The ride control system of claim 16, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide the control loop for each of the plurality of ride vehicles based on the first set of data when the bi-directional voting circuit selects the first set of data, and the backup controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide the control loop for each of the plurality of ride vehicles based on the second set of data when the bi-directional voting circuit selects the second set of data.

19. The ride control system of claim 16, wherein one of the primary controller or the backup controller is configured to control a show event on or proximate to the course based on one of the first set or the second set of data indicative of the location of each of the plurality of ride vehicles.

20. The ride control system of claim 16, wherein one of the primary controller or the backup controller is configured to determine a maintenance status of the respective one of the plurality of ride vehicles based on a trend of operation for the respective one of the plurality of ride vehicles.

21. A method for controlling a plurality of ride vehicles within a course, comprising:

identifying a location of each of the plurality of ride vehicles;

transmitting the location of each of the plurality of ride vehicles to a system controller via a primary wireless network, wherein the primary wireless network includes the system controller and a vehicle controller of each of the plurality of ride vehicles;

transmitting the location of each of the plurality of ride vehicles to a backup controller via a backup wireless network, wherein the backup wireless network includes the backup controller and a vehicle controller of each of the plurality of ride vehicles;

selecting one selected location from the location received by the system controller and the location received by the backup controller with a bi-directional circuit; and

controlling, with the system controller, a movement of each of the plurality of ride vehicles based on the one selected location.

22. The method of claim 21, comprising controlling, with the system controller, a show event on or proximate to the course based on the selected location of a particular one of the plurality of ride vehicles.

CLAIMS

The invention claimed is:

1. A ride control system, comprising: a plurality of ride vehicles positioned within a course and configured to travel within the course, wherein each of the plurality of ride vehicles comprises:

a vehicle controller configured to control movement of a respective one of the plurality of ride vehicles;

a position tracking system configured to facilitate identification of a location of the respective one of the plurality of ride vehicles within the course; and

a vehicle transceiver in communication with the vehicle controller;

a primary controller;

a primary transceiver in communication with the primary controller;

a primary wireless network formed by the vehicle transceiver and the primary transceiver to include at least the primary controller and the vehicle controller of each of the plurality of ride vehicles, wherein the primary controller is configured to receive data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the primary wireless network and wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide a control loop for each of the plurality of ride vehicles based on the data indicative of the location of each of the plurality of ride vehicles;

a backup controller configured to receive the data indicative of the location of each of the plurality of ride vehicles from the respective ones of the plurality of ride vehicles via the primary wireless network, wherein the primary controller is configured to control one or more show elements and the backup controller is not; and

a bi-directional voting circuit configured to select between the data received by the primary controller and the backup controller.

2. The ride control system of claim 1, wherein the position tracking system of each of the plurality of ride vehicles respectively includes a reader in communication with the controller of the respective ride vehicle, the reader configured to read position indicators.

3. The ride control system of claim 2, wherein the vehicle controller is configured to determine a location of the respective one of the plurality of ride vehicles based on data provided from the reader based on reading at least one position indicator.

4. The ride control system of claim 1, comprising a plurality position indicators located throughout the course, each of the position indicators corresponding to a specified location within the course.

5. The ride control system of claim 1, wherein the primary controller is configured to transmit instructions to each of the plurality of ride vehicles based on accumulated location information from all or a subset of the plurality of ride vehicles.

6. The ride control system of claim 1, wherein the primary controller is configured to control a show event on or proximate to the course based on the data indicative of the location of each of the plurality of ride vehicles.

7. The ride control system of claim 1, wherein the primary controller is configured to determine a maintenance status of the respective one of the plurality of ride vehicles based on a trend of operation for the respective one of the plurality of ride vehicles.

8. The ride control system of claim 1, wherein the primary controller is configured to receive a first location of a first ride vehicle and a second location of a second ride vehicle and to generate instructions based on the first and second locations for transmission to the vehicle controller of the first ride vehicle for controlling the movement of the first ride vehicle in a manner that differs from the second ride vehicle.

9. The ride control system of claim 1, comprising additional ride vehicles in communication with the primary controller via the primary transceiver, wherein the primary controller and primary transceiver are integral.

10. The ride control system of claim 1, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide dynamic spacing buffers between ride vehicles.

11. A ride control system, comprising: a plurality of ride vehicles positioned within a course and configured to travel within the course, wherein each of the plurality of ride vehicles comprises:

a vehicle controller configured to control movement of a respective one of the plurality of ride vehicles;

a position tracking system configured to facilitate identification of a location of the respective one of the plurality of ride vehicles within the course; and

a vehicle transceiver in communication with the vehicle controller;

a primary controller;

a primary transceiver in communication with the primary controller; and

a primary wireless network formed by the vehicle transceiver and the primary transceiver to include at least the primary controller and the vehicle controller of each of the plurality of ride vehicles, wherein the primary controller is configured to receive data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the primary wireless network and wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide a control loop for each of the plurality of ride vehicles based on the data indicative of the location of each of the plurality of ride vehicles, wherein the position tracking system is configured to facilitate identification of a first vehicle component location with respect to a second vehicle component, wherein the primary controller is configured to control a show event based on the first vehicle component location.

12. The ride control system of claim 11, wherein the first vehicle component includes a rotatable seating area and the second vehicle component includes a base relative to which the rotatable seating area moves.

13. The ride control system of claim 11, wherein the primary controller is configured to control the first vehicle component location based on a show event status.

14. A ride control system, comprising:

a plurality of ride vehicles positioned within a course and configured to travel within the course, wherein each of the plurality of ride vehicles comprises:

a vehicle controller configured to control movement of a respective one of the plurality of ride vehicles;

a position tracking system configured to facilitate identification of a location of the respective one of the plurality of ride vehicles within the course; and

a vehicle transceiver in communication with the vehicle controller;

a primary controller; a primary transceiver in communication with the primary controller;

a primary wireless network formed by the vehicle transceiver and the primary transceiver to include at least the primary controller and the vehicle controller of each of the plurality of ride vehicles, wherein the primary controller is configured to receive a first set of data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the primary wireless network;

a backup controller in communication with the primary controller; a backup transceiver in communication with the backup controller;

a backup wireless network formed by the vehicle transceiver and the backup transceiver to include at least the backup controller and the vehicle controller of each of the plurality of ride vehicles, wherein the backup controller is configured to receive a second set of data indicative of the location of each of the plurality of ride vehicles from respective ones of the plurality of ride vehicles via the backup wireless network; and

a bi-directional voting circuit configured to compare the first set of data and the second set of data, and to select between the first set of data and the second set of data, wherein the primary controller or the backup controller, and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide a control loop for each of the plurality of ride vehicles based on one of the first set or the second set of data indicative of the location of each of the plurality of ride vehicles.

15. The ride control system of claim 14, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide the control loop for each of the plurality of ride vehicles based on the first set or the second set of data.

16. The ride control system of claim 14, wherein the primary controller and the vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide the control loop for each of the plurality of ride vehicles based on the first set of data when the bi-directional voting circuit selects the first set of data, and the backup controller and the

vehicle controller of each of the plurality of ride vehicles are configured to coordinate to provide the control loop for each of the plurality of ride vehicles based on the second set of data when the bi-directional voting circuit selects the second set of data.

17. The ride control system of claim 14, wherein one of the primary controller or the backup controller is configured to control a show event on or proximate to the course based on one of the first set or the second set of data indicative of the location of each of the plurality of ride vehicles.

18. The ride control system of claim 14, wherein one of the primary controller or the backup controller is configured to determine a maintenance status of the respective one of the plurality of ride vehicles based on a trend of operation for the respective one of the plurality of ride vehicles.

19. A method for controlling a plurality of ride vehicles within a course, comprising:

identifying a location of each of the plurality of ride vehicles;

transmitting the location of each of the plurality of ride vehicles to a system controller via a primary wireless network, wherein the primary wireless network includes the system controller and a vehicle controller of each of the plurality of ride vehicles;

transmitting the location of each of the plurality of ride vehicles to a backup controller via a backup wireless network, wherein the backup wireless network includes the backup controller and a vehicle controller of each of the plurality of ride vehicles;

selecting one selected location from the location received by the system controller and the location received by the backup controller with a bi-directional voting circuit; and controlling, with the system controller, a movement of each of the plurality of ride vehicles based on the one selected location.

20. The method of claim 19, comprising controlling, with the system controller, a show event on or proximate to the course based on the selected location of a particular one of the plurality of ride vehicles.