CLAIMS:

1. A ride system to control ride vehicle motion, the ride system comprising:

a carriage configured to receive and secure a ride vehicle; and

a plurality of pulley systems drivingly coupled to the carriage and configured to cooperatively transport the carriage between a first engaged position with a first ride path and a second engaged position with a second ride path, each pulley system of the plurality of pulley systems comprising:

a pulley;

a pulley cable engaged with the pulley and attached to a respective portion of the carriage; and

a motor drivingly coupled to the pulley to drive pulley motion and pulley cable motion, and thereby cause the respective portion of the carriage to displace in accordance with the pulley motion and the pulley cable motion, wherein each pulley system of the plurality of pulley systems is configured to independently displace the respective portion of the carriage relative to another portion of the carriage.

2. The ride system of claim 1, wherein the plurality of pulley systems is coupled to at least four points on the carriage to control motion of the carriage in a predetermined manner.

3. The ride system of claim 1, comprising a control system communicatively coupled to the plurality of pulley systems, wherein the control system is configured to actuate the motor of each pulley system of the plurality of pulley systems to drive the corresponding pulley motion and the corresponding pulley cable motion.

4. The ride system of claim 3, wherein the control system comprises control circuitry configured to:

receive an indication that the ride vehicle is at a target position;

instruct a securing device of the carriage to secure the ride vehicle to the carriage at the target position;

actuate the motor of at least one pulley system of the plurality of pulley systems, thereby controlling the ride vehicle motion, in response to determining that the securing device is securing the ride vehicle to the carriage; and

disengage the securing device to allow egression of the ride vehicle out from the carriage.

5. The ride system of claim 1,

wherein the ride vehicle is configured to decelerate along the first ride path onto the carriage, and wherein the ride vehicle is configured to egress out from the carriage onto the second ride path.

6. The ride system of claim 1, wherein the first ride path is on a level different than the second ride path.

7. The ride system of claim 1, wherein causing the respective portion of the carriage to displace comprises displacing a contact point between the pulley cable and the carriage to achieve a vertical displacement, a roll motion, a pitch motion, or any combination thereof, of the carriage.

8. The ride system of claim 1, wherein the pulley cable of each pulley system of the plurality of pulley systems is a closed-loop pulley cable.

9. The ride system of claim 1, wherein the pulley cable of each pulley system of the plurality of pulley systems is an open-loop pulley cable.

10. The ride system of claim 1, wherein the pulley cable of each pulley system of the plurality of pulley systems extends through a height of the carriage.

11. The ride system of claim 1, wherein the carriage is removably coupled from a platform assembly, wherein the platform assembly comprises a securing mechanism configured to disengage the carriage from the platform assembly, wherein the platform assembly is configured to vertically displace between a first position corresponding to the first engaged position and a second position corresponding to the second engaged position.

12. A method of controlling multi-dimensional ride vehicle motion, the method comprising:

instructing, via a controller, a securing mechanism on a platform assembly to disengage from a carriage housing a ride vehicle received from a first ride path, wherein disengaging the platform assembly from the carriage enables the carriage to freely move relative to the platform assembly;

instructing, via the controller, a plurality of pulley systems to control carriage motion relative to the platform assembly, wherein each pulley system of the plurality of pulley systems is configured to couple to a corresponding portion on the platform assembly or the carriage, wherein actuating the plurality of pulley systems comprises causing each pulley system of the plurality of pulley systems to independently displace the corresponding portion on the platform assembly or the carriage;

instructing, via the controller, a motor of the platform assembly to vertically transport the platform assembly from a first position coupled to the first ride path to a second position coupled to a second ride path, wherein the platform assembly further defines the first ride path while in the first position, and wherein the platform assembly further defines the second ride path while in the second position; and

instructing, via the controller, the plurality of pulley systems to position the carriage on the platform assembly to enable the ride vehicle to travel along the second ride path.

13. The method of claim 12, comprising instructing a securing device to secure the ride vehicle to the carriage prior to instructing the plurality of pulley systems to control the carriage motion.

14. The method of claim 12, wherein the securing mechanism is disengaged in response to determining that the ride vehicle is secured to the carriage, wherein instructing the plurality of pulley systems to control the carriage motion comprises vertically displacing a pulley cable of each pulley system of the plurality of pulley systems to displace the corresponding portion of the carriage drivingly coupled to the pulley cable.

15. The method of claim 12, comprising instructing the platform assembly to retract or fold to avoid a travel path of the carriage while the plurality of pulley systems control the carriage motion.

16. The method of claim 12, wherein actuating the plurality of pulley systems to control the carriage motion comprises driving vertical motion of the ride vehicle while reducing roll motion, pitch motion, and yaw motion.

17. A ride system comprising:

a platform assembly, comprising a platform base configured to extend along a ride path, wherein the platform base comprises one or more alignment pins configured to mate with corresponding openings on a carriage to removably couple the carriage to the platform base, wherein the carriage is configured to house and secure a ride vehicle;

a first pulley cable coupled to the carriage at a first portion;

a second pulley cable coupled to the carriage at a second portion; and

a first motor coupled to the first pulley cable and a second motor coupled to the second pulley cable, wherein the first motor and the second motor are independently actuatable to independently displace the carriage at the first portion, the second portion, or both, wherein the first motor and the second motor are configured to independently actuate to vertically transport the carriage from a first position associated with a first ride path to a second position associated with a second ride path wherein the platform assembly further defines the first ride path while in the first position, and wherein the platform assembly further defines the second ride path while in the second position.

18. The ride system of claim 17, wherein the platform assembly comprises a back stabilizer configured to be level with a top of a floor of the carriage to facilitate egression of the ride vehicle out of the carriage and onto the first ride path or the second ride path.

19. The ride system of claim 18, wherein the egression of the ride vehicle comprises the ride vehicle traveling from the floor of the carriage, onto the back stabilizer, and onto the first ride path or the second ride path.

20. The ride system of claim 17, comprising a control system communicatively coupled to the platform assembly, the first motor, and the second motor, wherein the control system comprises processing circuitry and memory circuitry storing instructions thereon configured to be executed by the processing circuitry, wherein the instructions are configured to cause the processing circuitry to instruct the first motor to displace the first pulley cable or the second motor to displace the second pulley cable, thereby driving platform assembly motion of the platform assembly.

21. The ride system of claim 17, wherein the platform assembly comprises a plurality of rollers configured to rotate to facilitate the vertical transportation of the platform assembly.