CLAIMS

1. A system, comprising:

a capsule;

a drum of the capsule comprising a wall defining a chamber;

a platform of the capsule supporting a restraint for a passenger and configured to fit within the chamber; and

a drive system configured to drive rotation of the capsule about a central axis of the capsule and to drive at least forward or rearward movement of the capsule along a closed loop track, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the closed loop track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of the drum to drive rotation of the capsule about the central axis.

2. The system of claim 1, wherein the platform is supported on a platform track within the drum.

3. The system of claim 2, wherein the capsule comprises an additional drive system configured to drive movement of the platform along the platform track to adjust the platform between an open position and a closed position relative to the drum.

4. The system of claim 1, wherein the capsule comprises a lock assembly configured to lock the platform in a closed position within the drum.

5. The system of claim 4, wherein the lock assembly comprises a power source configured to provide power to a lock of the lock assembly to maintain the lock in a locked position and a biasing member configured to drive the platform from the closed position to the open position in response to an interruption in power from the power source.

6. The system of claim 1, comprising a screen positioned with the drum, wherein the screen is configured to display an image.

7. The system of claim 6, wherein the screen comprises a curved screen coupled to an inner surface of the drum.

8. The system of claim 1, comprising a counter-balance configured to facilitate rotation of the capsule.

9. The system of claim 1, comprising a controller configured to receive an input from an input device and configured to control the drive system to adjust a parameter related to movement of the capsule based on the input.

10. The system of claim 9, wherein the parameter comprises a frequency of rotation of the capsule, a rate of rotation of the capsule, a speed of movement of the capsule along the closed loop track, or any combination thereof.

11. The system of claim 1, wherein the frame of the drive system supports a second spherical rolling element that is configured to contact an inner surface of the closed loop track to drive at least forward or rearward movement of the capsule relative to the closed loop track.

12. The system of claim 1, wherein the drive system comprises a spherical induction motor.

13. A system, comprising:

a closed loop track;

a capsule comprising a passenger restraint and a screen configured to display an image to a passenger supported by the restraint; and

a drive system configured to drive rotation of the capsule about a central axis of the capsule and to drive at least forward or rearward movement of the capsule along the closed loop track, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the closed loop track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of a drum to drive rotation of the capsule about the central axis.

14. The system of claim 13, wherein the capsule comprises: the drum defining a chamber, wherein the drum comprises a door flush with an outer wall of the drum; and a platform configured to support the passenger restraint.

15. The system of claim 13, wherein the screen comprises a curved screen positioned on an inner surface of the capsule.

16. The system of claim 13, comprising a controller configured to receive an input from an input device and to control the drive system to adjust a parameter related to movement of the capsule based on the input, or select the image from a database based on the input.

17. The system of claim 13, comprising a battery configured to be charged via induction and configured to supply power to the drive system.

18. The system of claim 13, wherein the capsule comprises: a platform configured to support the passenger restraint; and a plurality of actuators configured to contact the platform to drive movement of the platform relative to the capsule.

19. A method, comprising:

positioning a platform supporting a passenger restraint within a chamber defined by a wall of a capsule;

driving at least forward or rearward movement of the capsule along a closed loop track using a drive system; and

driving rotation of the capsule about a central axis of the capsule using the drive system, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the closed loop track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of the drum to drive rotation of the capsule about the central axis.

20. A system, comprising:

a capsule;

a drum of the capsule comprising a wall defining a chamber;

a platform of the capsule supporting a restraint for a passenger and configured to fit within the chamber, wherein the platform is supported on a platform track within the drum; and

a drive system configured to drive rotation of the capsule about a central axis of the capsule and to drive at least forward or rearward movement of the capsule along a track, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of the drum to drive rotation of the capsule about the central axis.

21. A system, comprising:

a capsule;

a drum of the capsule comprising a wall defining a chamber;

a platform of the capsule supporting a restraint for a passenger and configured to fit within the chamber; a lock assembly configured to lock the platform in a closed position within the drum; and

a drive system configured to drive rotation of the capsule about a central axis of the capsule and to drive at least forward or rearward movement of the capsule along a track, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of the drum to drive rotation of the capsule about the central axis.

22. A system, comprising:

a capsule;

a drum of the capsule comprising a wall defining a chamber;

a platform of the capsule supporting a restraint for a passenger and configured to fit within the chamber; and

a drive system configured to drive rotation of the capsule about a central axis of the capsule and to drive at least forward or rearward movement of the capsule along a track, wherein the central axis of the capsule is parallel to a direction of travel of the forward or rearward movement of the capsule along the track,

wherein the drive system comprises a frame supporting a first spherical rolling element that is configured to contact a radially-outer surface of the drum to drive rotation of the capsule about the central axis.

23. A ride system, comprising:

a drum comprising a wall circumscribing a central axis of the drum such that the wall defines a chamber configured to house a passenger;

an additional drum positioned about and coupled to the drum; and

a drive system configured to drive rotation of the drum about the central axis and relative to the additional drum using spherical rolling elements and to drive at least forward or rearward movement of the drum and the additional drum along a closed loop track such that the forward or rearward movement and the rotation occur simultaneously, wherein the central axis of the drum is in alignment with a direction of travel of the forward or rearward movement of the drum along the closed loop track.

24. The ride system of claim 23, wherein the drive system comprises a first spherical rolling element that is configured to contact a radially-outer surface of the wall of the drum to drive the rotation of the drum about the central axis.

25. The ride system of claim 24, wherein the drive system comprises:

a second spherical rolling element that is configured to contact the closed loop track to drive at least the forward or rearward movement of the drum and the additional drum relative to the closed loop track; and

a frame configured to be positioned between the additional drum and the closed loop track, wherein the second spherical rolling element is coupled to the frame.

26. The ride system of claim 23, wherein the drive system comprises a plurality of spherical rolling elements that include substantially spherical tires, annular tires, or a combination thereof.

27. The ride system of claim 23, wherein the drive system comprises a plurality of spherical rolling elements coupled to the additional drum or to the closed loop track, and the plurality of spherical rolling elements are configured to extend between a radially-outer surface of the additional drum and an inner surface of the closed loop track to drive at least the forward or rearward movement of the drum and the additional drum along the closed loop track.

28. The ride system of claim 23, wherein the drive system comprises a spherical induction motor.

29. The ride system of claim 23, wherein the drive system is configured to drive the rotation of the drum about the central axis of the drum and either the forward or rearward movement of the drum and the additional drum along the closed loop track simultaneously.

30. The ride system of claim 23, wherein at least a portion of the drum is cylindrical.

31. The ride system of claim 23, comprising a battery configured to provide power to the drive system.

32. The ride system of claim 31, wherein the battery is configured to be charged via induction.

33. The ride system of claim 23, comprising a door formed in a wall of the drum to enable ingress and egress of the passenger into the drum.

34. The ride system of claim 23, comprising a platform that is configured to support the passenger within the chamber, wherein the platform is configured to move along a platform track within the chamber to adjust the platform between a first position in which at least a portion

of the platform is positioned outside of the drum to enable the passenger to load onto the platform and a closed position in which the platform is positioned inside of the drum to enable the passenger to be enclosed within the chamber.

35. The ride system of claim 23, comprising:

a screen positioned with the drum; and

a controller configured to instruct display of an image on the screen in a manner that coordinates with motion of the drum.

36. The ride system of claim 23, comprising:

an input device positioned within the drum and configured to receive an input from the passenger; and

a controller configured to receive a signal indicative of the input from the input device and to control the drive system to adjust a parameter related to motion of the drum based on the signal.

37. The ride system of claim 36, wherein the parameter comprises a frequency of the rotation of the drum, a speed of the rotation of the drum, a speed of the forward or rearward movement of the drum along the closed loop track, or any combination thereof.

38. A ride system, comprising:

a closed loop track;

a drum configured to house a passenger; and

a drive system comprising a plurality of spherical rolling elements configured to contact the drum and the closed loop track to drive rotation of the drum about a central axis of the drum and to drive at least forward or rearward movement of the drum along the closed loop track, wherein the central axis of the drum is in alignment with a direction of travel of the forward or rearward movement of the drum along the closed loop track, the closed loop track comprises a curved radially-inner surface comprising a first radius of curvature, and at least a portion of the drum comprises a curved radially-outer surface comprising a second radius of curvature that corresponds to the first radius of curvature.

39. The ride system of claim 38, wherein the plurality of spherical rolling elements include a plurality of substantially spherical tires, a plurality of annular tires, or a combination thereof.

40. A method of operating a ride system, comprising:

positioning a drum comprising a wall that defines a chamber to house a passenger on a closed loop track;

driving at least forward or rearward movement of the drum along the closed loop track using a drive system; and

driving rotation of the drum about a central axis of the drum using the drive system, wherein the drive system comprises a spherical tire that is configured to enable the forward or rearward movement and the rotation to occur simultaneously, and wherein the central axis of the drum is in alignment with a direction of travel of the forward or rearward movement of the drum along the closed loop track.

41. A ride system, comprising:

a drum comprising a wall circumscribing a central axis of the drum such that the wall defines a chamber configured to house a passenger;

a drive system configured to drive rotation of the drum about the central axis and to drive at least forward or rearward movement of the drum along a closed loop track, wherein the central axis of the drum is in alignment with a direction of travel of the forward or rearward movement of the drum along the closed loop track; and

a platform configured to support the passenger within the chamber, wherein the platform is configured to move along a platform track within the chamber to adjust the platform between a first position in which at least a portion of the platform is positioned outside of the drum to enable the passenger to load onto the platform and a closed position in which the platform is positioned inside of the drum to enable the passenger to be enclosed within the chamber.

42. The ride system of claim 23, wherein the additional drum is coupled to the drum via, at least a portion of, the drive system.