# SYSTEMS AND METHODS FOR A MULTI-DEGREE OF FREEDOM RIDE VEHICLE

ABSTRACT

**[0068]** A ride system includes a ride vehicle and an external sensor assembly disposed along a ride path and configured to measure external parameters. The ride vehicle includes an internal sensor assembly configured to measure internal parameters, a chassis, a cabin, and a motion base disposed between the chassis and the cabin, such that the motion base includes a turntable and a plurality of actuators. The ride vehicle also includes a controller that instructs (i) the turntable to rotate and (ii) the plurality of actuators to rotate, extend, or retract, to control six or more degree-of-freedom (DOF) motion of the cabin relative to the chassis, such that the controller is configured to instruct the turntable and the plurality of actuators based on the external parameters, the internal parameters, or both.