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SHOW ELEMENT ACTUATION SYSTEM AND METHOD

Abstract

A ride system includes a ride vehicle and a show element coupled to the ride vehicle, wherein the show element includes an actuator coupled to a prop. The ride system also includes a control system configured to generate one or more show effects for the ride system, instruct the actuator to actuate the prop, wherein actuating the prop causes the prop to move from a hidden configuration to a visible configuration, and coordinate display of the one or more show effects with the prop transitioning to the visible configuration.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION [0001] This application claims priority from and the benefit of U.S. Provisional Application Ser. No. 63/553,851, entitled “SHOW ELEMENT ACTUATION SYSTEM AND METHOD”, filed Feb. 15, 2024, which is hereby incorporated by reference in its entirety.

BACKGROUND

[0002] A venue, such as an amusement park, may include a variety of attractions. The attractions may include ride vehicles that carry passengers along a ride path. Some attractions may also incorporate show elements (e.g., animated figures) along the ride path to enhance guest experiences, such as by adding elements of interest and surprise.

[0003] With increasing sophistication and complexity of modern ride attractions, it is presently recognized that it may be desirable to provide improved and more creative visual effects by enabling show element interaction with the ride vehicles to create unique experiences for the guests in the attractions. However, it is also presently recognized that interactions of the show elements with the ride vehicles may be complex and difficult.

[0004] This section is intended to introduce the reader to various aspects of art that may be related to various aspects of the present disclosure, which are described and/or claimed below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects of the present disclosure. Accordingly, it should be understood that these statements are to be read in this light, and not as admissions of prior art.

BRIEF DESCRIPTION

[0005] Certain embodiments commensurate in scope with the originally claimed subject matter are summarized below. These embodiments are not intended to limit the scope of the claimed subject matter, but rather these embodiments are intended only to provide a brief summary of possible forms of the subject matter. Indeed, the subject matter may encompass a variety of forms that may be similar to or different from the embodiments set forth below.

[0006] In an embodiment, a ride system includes a ride vehicle and a show element coupled to the ride vehicle, wherein the show element includes an actuator coupled to a prop. The ride system also includes a control system configured to generate one or more show effects for the ride system, instruct the actuator to actuate the prop, wherein actuating the prop causes the prop to move from a hidden configuration to a visible configuration, and coordinate display of the one or more show effects with the prop transitioning to the visible configuration.

[0007] In an embodiment, a tangible, non-transitory, computer-readable medium includes instructions that, when executed by a processor, are configured to cause the processor to generate a show effect, instruct an actuator to actuate a prop, wherein actuating the prop causes the prop to move from a hidden configuration to a visible configuration based on the show effect, and coordinate display of the show effect with the prop transitioning to the visible configuration.

[0008] In an embodiment, a ride system includes a ride vehicle, including one or more show elements, the one or more show elements including one or more actuators coupled to one or more props, and one or more displays. The ride system also includes a control system including a processor and a memory, the memory encoded with instructions configured to be executed by the processor to cause the attraction control system to generate one or more show effects for the ride system, wherein the one or more show effects include image data, transmit the image data to the one or more displays to cause display of one or more images, actuate the one or more props via the one or more actuators in coordination with the display of the one or more images.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0010] FIG. **1** is a perspective view of a ride system with an integrated show element, in accordance with an embodiment of the present disclosure;

[0011] FIG. **2** is a block diagram of a ride system including a control system, a ride vehicle, and one or more show effects, in accordance with an embodiment of the present disclosure;

[0012] FIG. **3** is a side view of a ride vehicle of the ride system, wherein an integrated show effect is actuating between a hidden configuration and a visible configuration, in accordance with an embodiment of the present disclosure;

[0013] FIG. **4** is a top view of a ride vehicle with an integrated display and an integrated show element actuating between a hidden configuration and a visible configuration relative to the display, in accordance with an embodiment of the present disclosure; and

[0014] FIG. **5** is a perspective side view of the ride vehicle of FIG. **4**, in accordance with an embodiment of the present disclosure.

DETAILED DESCRIPTION

[0015] The present disclosure generally relates to systems and methods for actuating one or more show elements integrated with a ride vehicle, which may be done in coordination with one or more show effects. The show effects may include other show elements (e.g., actuatable prop, animated figure) or visual effects (e.g., lighting effects, pyrotechnics, display effects). Present embodiments may include an actuation element that is integral with the ride vehicle and operable to move relative to another ride vehicle component in transition from a hidden configuration into a visible configuration. This transition of the actuation element may be coordinated with one or more show effects to create an illusion of physical contact or close interaction of the one or more other show effects with the ride vehicle.

[0016] One or more specific embodiments of the present disclosure will be described below. In an effort to provide a concise description of these embodiments, all features of an actual implementation may not be described in the specification. It should be appreciated that in the development of any such actual implementation, as in any engineering or design project, numerous implementation-specific decisions must be made to achieve the developers' specific goals, such as compliance with system-related and business-related constraints, which may vary from one implementation to another. Moreover, it should be appreciated that such a development effort might be complex and time-consuming, but would nevertheless be a routine undertaking of design, fabrication, and manufacture for those of ordinary skill having the benefit of this disclosure.

[0017] When introducing elements of various embodiments of the present disclosure, the articles “a,” “an,” and “the” are intended to mean that there are one or more of the elements. The terms “comprising,” “including,” and “having” are intended to be inclusive and mean that there may be additional elements other than the listed elements. Additionally, it should be understood that references to “one embodiment” or “an embodiment” of the present disclosure are not intended to be interpreted as excluding the existence of additional embodiments that also incorporate the recited features.

[0018] Generally, amusement park attractions (e.g., roller coasters or dark rides) include ride vehicles that move along a ride path (e.g., ride track). Additionally, some amusement park attractions include show effects such as animated figures, props, lighting effects, screen displays, etc. that may be utilized to augment a visual experience for passengers in the ride vehicles. Traditionally, the show effects are disposed at specific locations in the amusement park attraction. For example, a show element, such as an animated figure, may be positioned near a ride path and

may be actuated when in view of passengers as their ride vehicle passes by the animated figure. However, as the ride vehicle continues along the ride track, the passengers are eventually no longer in the vicinity of the animated figure and are unable to view it. With this in mind, an embodiment of the present disclosure is directed to a show element that moves with the ride vehicle to provide interactions in coordination with the one or more other show effects to enable a unique visual experience for the passengers. For example, an animated figure of a dragon positioned near a ride vehicle may be perceived as actually contacting the ride vehicle based on coordinated actuation of the animated figure and a show element (e.g., an actuatable prop designed to look like a dragon claw) coupled with the ride vehicle.

[0019] With the foregoing in mind, an embodiment of systems and methods described herein relates generally to controlling a show element of a ride vehicle of an attraction to enable coordination and/or interaction between the show element and a show effect of the attraction. A show element may include an actuator (e.g., one or more actuators), which may be coupled to a prop (e.g., one or more props) such that the actuator can transition the prop between a hidden configuration and a visible (e.g., exposed) configuration. In the hidden configuration, the actuator may orient the prop relative to one or more ride vehicle features (e.g., a roof, a side wall, a display screen mounted on the ride vehicle) such that the prop is hidden from a view of any passengers of the ride vehicle (e.g., passengers properly seated within the ride vehicle). For example, an actuator of a show element may be coupled to a roof of the ride vehicle, on a side of the roof opposite a cabin for housing passengers, such that the actuator is not viewable by the passengers. At various points of time during a ride, a control system may be configured to actuate the actuator to rotate, translate, extend, and/or otherwise move the attached prop (and/or other portion of the show element) into the view of the passengers. The control system may be programmed to actuate the actuator based on one or more show effects in the attraction such that coordination between the show element and one or more show effects is achieved. In this manner, the show element and the show effects may cooperate to create an illusion of contact (e.g., physical contact) with and/or manipulation of the ride vehicle by the one or more show effects.

[0020] As an example, the attraction may include show effects that form parts of a media environment visually depicting an ocean to the passenger. The show effects may include an animated figure of a shark, which may be actuated such that it visually appears to be swimming toward the ride vehicle through the ocean displayed within the attraction. Additionally, the show element may be coupled to a bottom of the ride vehicle and may include an appendage, such as a prop that looks like the head of the shark. As the animated figure representing the shark approaches the vehicle, the show effects may be adjusted to provide an appearance of the shark disappearing or the ride vehicle may be positioned such that the animated figure is no longer within a field of view for the passengers. In conjunction with this, the ride system may actuate the show element and move the appendage (e.g., the prop that looks like the shark's head) to transition from a hidden configuration to a visible configuration.

[0021] In the visible configuration, the appendage or prop may contact or come very close to contacting certain features of the ride vehicle. Thus, the movement of the appendage in coordination with the show effects may create an illusion of continuity and passengers may perceive that the shark, as depicted by the animated figure, has come out of the ocean to engage (e.g., bite) the ride vehicle. In accordance with embodiments of the present disclosure, such coordination between actuation of any of various types of shows elements integrated with a ride vehicle and surrounding show effects can provide cumulative visual effects that create an illusion of interaction and improve the immersive experience provided to the passengers in an attraction.

[0022] In an embodiment, a top, bottom, and/or side (e.g., wall, panel, window) of the ride vehicle may include a media display (e.g., an electronic display). Additionally, the actuator of the show element may be positioned behind the media display such that an actuated feature or appendage (e.g., a prop) may be hidden from view in a hidden configuration (e.g., with the actuator retracted)

and then moved into view in a visible configuration (e.g., with the actuator extended). The control system may cause the show effects to be displayed on the media display in coordination with the show element. For example, the media display may be used to display a creature appearing to be reaching toward the edge of the wall of the ride vehicle and the show element (e.g., an actuator with a prop depicting an arm of the creature) may be actuated to simultaneously appear on the side of the media display. In this manner, the systems and methods described herein may provide the unique visual experience for the passengers by enabling coordination of effects that cumulatively create a perception of interaction between the show elements and the ride vehicle via the show elements integrated with the ride vehicle.

[0023] FIG. **1** is a perspective view of a ride system **10** with an integrated show element **11**, in accordance with an embodiment of the present disclosure. The ride system **10** may be part of an attraction **12** and may include a ride path **14** having a vehicle rail **16** and an accessory rail **18**. As an example, the ride path **14** may include a ride track. In an embodiment, the accessory rail **18** may be separate from the ride path **14**. The ride system **10** may also include a ride vehicle **20** (e.g., roller coaster or ride) having a ride vehicle base **22** configured to interface with the vehicle rail **16** and move along the vehicle rail **16** of the ride path **14**. In an embodiment, the ride vehicle base **22** may include a friction wheel assembly **24** configured to interface with the vehicle rail **16**. However, in other embodiments, the ride vehicle **20** may move along the vehicle rail **16** using any suitable propulsion or interface assembly. Additionally, the ride vehicle **20** may have one or more ride seats **26** attached to the ride vehicle base **22**, such that the ride vehicle **20** may hold one or more passengers as the ride vehicle **20** travels along the ride path **14**. The ride vehicle base **22** may include a frame or body of the ride vehicle **20**. It should be noted that although a single show element **11** is illustrated in FIG. **1**, the ride vehicle **20** may include or be coupled to any suitable number of show elements **11**. Further, at least part of the show element **11** or the show elements **11** may be actuated relative at least part of the ride vehicle **20**.

[0024] The show element **11** may include an actuator **28** coupled to a prop **30** (e.g., one or more props) such that the actuator **28** can transition the prop **30** between a hidden configuration and a visible configuration. That is, at various points of time during a ride, a control system may be configured to actuate the actuator **28** to rotate, translate, extend, and/or otherwise move the prop **30** (and/or other portion of the show element **11**) into the view of the passengers at a viewing area **31**. The viewing area **31** may be an area where the passengers may be able to view (e.g., see) the prop **30** when the prop **30** is actuated into the visible configuration. For example, the control system may cause the actuator **28** to move the prop **30** upward, downward, forward, rearward, outward, and/or inward with respect to at least part of the ride vehicle **20** (e.g., the viewing area **31**).

[0025] In the hidden configuration, the actuator **28** may orient the prop **30** relative to one or more ride vehicle features (e.g., a roof, a side wall, the display **68** mounted on the ride vehicle) such that the prop is hidden from a view (e.g., of the viewing area **31**) of any passengers of the ride vehicle **20**. For example, the actuator **28** may be coupled to a roof of the ride vehicle, on a side of the roof opposite a cabin for housing passengers, such that the actuator **28** is not viewable by the passengers. At various points of time during a ride cycle, a control system may instruct the actuator **28** to rotate, translate, extend, and/or otherwise move the prop **30** (and/or other portion of the show element **11**) into the view of the passengers. For example, the control system may actuate the actuator **28** to move the prop **30** in coordination with show effects being displayed by the attraction control system **50**.

[0026] In an embodiment, an animated figure may be coupled with the accessory rail **18**. The animated figure may transition along the ride path **14** via the accessory rail **18** to travel away from or toward the ride vehicle **20**. In this manner, the animated figure may appear as if moving relative to the ride vehicle **20** (e.g., the viewing area **31**). As such, the animated figure may move into a sightline or out of the sightline of the passengers of the ride vehicle **20**. As such, the control system may be configured to actuate the actuator **28** to transition the prop **30** in coordination with the

animated figure traveling toward or away from the ride vehicle **20**. As an example, the animated figure may include an animated figure of a squid, which may travel along the accessory rail **18** such that it visually appears to be swimming toward the ride vehicle **20**. Additionally, the prop may include an appendage, such that the prop looks like a tentacle of the squid. The animated figure representing the squid may approach the ride vehicle **20**, and in conjunction, the actuator **28** may actuate the prop **30** to move the appendage (e.g., the prop that looks like the squid's tentacle) to transition to the visible configuration. In this manner, the animated figure transitioning via the accessory rail **18** may create the perception of the squid, as depicted by the animated figure, engaging the ride vehicle **20**.

[0027] In an embodiment, the ride system **10** may include a cover **27** (e.g., roof, canopy, overhead, ceiling) above, below, and/or on a side (e.g., left and/or right side) of the ride vehicle **20** at a load station of the ride vehicle **20**. The cover **27** may conceal any suitable number of show elements **11** coupled to the ride vehicle **20**. The cover **27** may prevent the show element **11** from being seen from the boarding area and/or while a passenger is boarding the ride vehicle **20**. For example, the show element **11** may be coupled to the roof of the ride vehicle **20**. The roof of the ride vehicle **20** may be hidden from the view of the passengers entering the ride vehicle **20** by the cover **27**. When a ride cycle begins, the ride vehicle **20** may travel away from the cover **27**.

[0028] Moreover, any suitable number of show elements **11** may be coupled to any suitable location of the ride vehicle **20**. For example, each show element **11** (e.g., one or more show elements **11**) may be coupled to a top portion, a bottom portion, and/or a side portion (e.g., left and/or right side) of the ride vehicle **20**. Further, the show element **11** may include any actuator or mechanical device configured to actuate relative to the ride vehicle **20**. For example, the actuator **28** may include a hydraulic actuator, pneumatic actuator, electric actuator, or mechanical actuator configured to drive actuation of the prop **30**. In one embodiment, a mechanical linkage and the actuator **28** may be configured to drive actuation of the prop **30**.

[0029] The actuator **28** may be configured to actuate the prop **30** based at least in part on the show effects of the attraction **12** such that coordination between the show element **11** and the show effects are achieved. That is, an attraction control system of the attraction **12** may generate instructions to cause the actuator **28** to actuate based at least in part on the show effects. In an embodiment, the attraction control system may generate instructions to cause the actuator **28** to actuate based at least in part on the show effects and a detected position of the ride vehicle **20** along the ride path **14**. Further, a ride vehicle control system of the ride vehicle **20** may receive the instructions from the attraction control system and cause (e.g., control) actuation of the actuator **28**. Additional details regarding the ride system **10** will be described below with respect to FIG. **2**.

[0030] FIG. **2** is a block diagram of the ride system **10** including an attraction control system **50** (e.g., controller), the ride vehicle **20**, and one or more show effects **58**. The attraction control system **50** may include one or more processors **52** (referred to herein, in singular form, as a "processor **52**" for convenience) and a memory **54**. The attraction control system may also include communications circuitry **56**. The processor **52** (which may represent one or more processors) may be any type of computer processor or microprocessor capable of executing computer-executable code. The processor **52** may also include multiple processors, processing circuitry, or a processing system that may perform the operations described herein. The memory **54** may include a volatile memory, such as random-access memory (RAM), and/or a nonvolatile memory (ROM). The memory **54** may store a variety of information and may be used for various purposes. For example, the memory **54** may store processor-executable instructions, such as instructions for controlling one or more show effects **58**. The memory **54** may also include flash memory, or any suitable optical, magnetic, or solid-state storage medium, or a combination thereof. The memory **54** may store data, instructions (e.g., software or firmware), and any other suitable information. For example, the memory **54** may be encoded with instructions that are to be executed by the processor **52**.

[0031] The communications circuitry **56** may include a wired or wireless communication

component that facilitates communication between the control system **50**, a ride vehicle control system **60** of the ride vehicle **20**, the one or more show effects **58**, and/or various other computing systems. The communications circuitry **56** may include antennas, transceiver circuits, and signal processing hardware, and/or software (e.g., hardware or software filters, A/D converters, multiplexers amplifiers), or a combination thereof, that may be configured to communicate over wired and/or wireless communication paths (e.g., a hardwired network, Infrared (IR) wireless communication, satellite communication, broadcast radio, Microwave radio, Bluetooth, Zigbee, Wi-fi, UHF, NFC). For example, the attraction control system **50** may generate instructions and transmit the instructions to the ride vehicle control system **60** via the communications circuitry **56**. As another example, the attraction control system **50** may generate instructions to transmit to each of the show effects **58** to cause display and/or movement of the show effects **58**.

[0032] The ride vehicle control system **60** of the ride vehicle **20** may include one or more processors **62** (referred to herein, in singular form, as a "processor **62**" for convenience), a memory **64**, and/or communications circuitry **66**. The processor **62** (which may represent one or more processors) may be similar and/or the same as the processor **52**. The memory **64** may be similar and/or the same as the memory **54**. The communications circuitry **66** may be similar and/or the same as the communications circuitry **56**. The ride vehicle **20** may also include the show element **11**, a display **68**, and/or one or more sensors **70**. As described herein, the show element **11** may include the actuator **28** and the prop **30**. For example, the prop **30** may include an appendage (e.g., body part) of a figure (e.g., human, animal, creature), an animated figure character, paddles, wings, a special effects device, and/or any suitable object that may be used to provide visual effects in conjunction with the show effects **58** of the attraction **12**.

[0033] The display **68** may include any suitable display (e.g., liquid crystal display (LCD), light emitting diode (LED) display, organic light emitting diode (OLED) display, micro-LED, transparent LCD display) that receives image data and projects (e.g., displays, transmits) the image data as imagery. The image data may be generated by and received from the attraction control system **50** and/or the ride vehicle control system **60**. The image data may include objects in motion such as scenes where various elements within image frames of the image data are changing positions and/or configurations. In an embodiment, the display **68** may include at least one two-dimensional (2D) display. In an embodiment, the display **68** may include at least one three-dimensional (3D) or volumetric display such as an autostereoscopic display, a light field display, and the like. It should be noted that although a single display **68** is described herein, the ride vehicle **20** may include any suitable number of displays in any suitable portion of the ride vehicle **20**. For example, the ride vehicle **20** may include a first display **68** on a right-side wall of the ride vehicle **20** and a second display **68** on a left-side wall of the ride vehicle **20**.

[0034] The one or more sensors **70** may include any number of positional sensors, acceleration sensors, contact sensors, motion sensors, image sensors, or any other suitable sensor. For example, the positional sensor may enable detection of a position of the ride vehicle **20** within the attraction **12**. The acceleration sensor may detect an acceleration force, such as when the ride vehicle **20** is moving through the attraction **12**. The contact sensor may enable detection of a physical contact or touch with at least one show effect **58** of the attraction **12**. The motion sensor may detect motion and a direction in which the ride vehicle **20** is moving. The image sensors may enable capture of image data, which may include the image data of the show effects surrounding the ride vehicle **20** within the attraction **12**. The one or more sensors **70** may provide (e.g., transmit) sensor data to the attraction control system **50** and/or the ride vehicle control system **60**.

[0035] In an embodiment, the one or more sensors **70** may detect a current position of the prop **30** and provide the sensor data to the attraction control system **50** and/or the ride vehicle control system **60**. The attraction control system **50** and/or the ride vehicle control system **60** may then perform verification based on the sensor data to determine whether the prop **30** is an expected location (e.g., is or is not positioned correctly). For instance, if the prop **30** is not positioned

correctly, the attraction control system **50** and/or the ride vehicle control system **60** may output instructions to cause the actuator **28** to transition the prop **30** to the expected location. The ride vehicle control system **60** may receive the instructions generated by the attraction control system **50** and cause the actuator **28** to actuate based on the instructions. The ride vehicle control system **60** may instruct actuation of the actuator **28** such that coordination between the show element **11** and the show effects **58** is achieved. Accordingly, the show element **11** and the show effects **58** may cooperate to create an illusion of contact (e.g., physical contact) with and/or manipulation of the ride vehicle **20** by the show effects **58**.

[0036] While the attraction control system **50** and the ride vehicle control system **60** are illustrated as separate components, in an embodiment, the attraction control system **50** and the ride vehicle control system **60** may be one component. That is, the attraction control system **50** may be partially integrated with or completely integrated with the ride vehicle control system **60**. For example, the attraction control system **50** and the ride vehicle control system **60** may instruct the actuator **28** such that the prop **30** can transition between the hidden configuration and the visible configuration, generate/transmit the image data for the display **68**, and/or generate/control the show effects **58** within the attraction **12**.

[0037] The attraction control system **50** and/or the ride vehicle control system **60** may control the actuator **28**, the display **68**, and/or the show effects **58** based on a predetermined program, which may include detection and/or display of the show effects **58**, and/or any other suitable factor. For example, the predetermined program may enable synchronization of various elements such as the show element **11** and the show effects **58**, which may include lights, sounds, visuals, animated figures, audio, and any other suitable special effect of the attraction **12**. Indeed, the predetermined program may include programmed sequences, timings, and cues to ensure each of the various elements operates in a uniform manner. The term synchronization or synchronize should be understood to mean coordinated operation that is approximately in unison and/or at a share or similar rate. In this manner, coordination between the show element **11**, the show effects **58**, and/or any other special effects of the attraction **12** may be improved to create the illusion of interaction and provide the more immersive experience to the passengers.

[0038] In operation, as an example, the attraction control system **50** may be configured to generate instructions to transmit to the ride vehicle control system **60** to cause the ride vehicle **20** to move along the ride path **14**. In an embodiment, the attraction control system **50** may determine the position of the ride vehicle **20**, the show element **11**, and/or the show effects **58** using sensor data received from the one or more sensors **70**. The attraction control system **50** may then provide instructions to the ride vehicle control system **60** to cause movement and/or rotation of the show element **11**. The attraction control system **50** may also (e.g., either simultaneously or at a different time period) instruct adjustment of the show effects **58** to enable the coordination, contact, and/or the interaction between the show element **11** and the show effects **58**. Additional details regarding coordination between the show element **11** and the show effects **58** will be described below with respect to FIGS. **3-5**.

[0039] With the foregoing in mind, FIG. **3** is a side view of the ride vehicle **20** of the ride system **10**, in accordance with embodiments of the present disclosure. As illustrated, the ride vehicle **20** may include a passenger **90** and the show element **11**, which may include the actuator **28** and the prop **30**. As described herein, the attraction control system **50** and/or the ride vehicle control system **60** may cause the actuator **28** to orient the prop **30** relative to one or more features of the ride vehicle **20** (e.g., the viewing area **31**) such that the prop **30** is hidden from the view of any passengers of the ride vehicle **20** or visible in the view of the passengers. In an embodiment, the prop **30** may be oriented based on sensor data (e.g., sensor signals) received from the one or more sensors **70** indicative of a position of each of the show effects **58**, the position of the show element **11**, the position of the ride vehicle **20**, and/or any other suitable position of a feature included in the attraction **12**. In an embodiment, the prop **30** may be oriented based on a predetermined program

that may be input (e.g., programmed) into the attraction control system **50** and/or the ride vehicle control system **60**.

[0040] As an example, the attraction **12** may include the show effects **58** that form parts of a media environment visually depicting a vista of mountains to the passenger **90**. The show effects **58** may also include an animated figure of a dragon, which may be actuated such that it visually appears to fly toward the ride vehicle **20** through a sky displayed within the attraction **12**. Additionally, the prop **30** may include an appendage, such as a prop that looks like a claw of the dragon. As the animated figure representing the dragon approaches the ride vehicle **20**, the attraction control system **50** may adjust the show effects **58** to provide an appearance of the dragon disappearing or the ride vehicle **20** being positioned such that the animated figure is no longer within a field of view of the passenger **90**. In conjunction with this, the ride vehicle control system **60** may actuate the actuator **28** and move the prop **30** (e.g., the prop that looks like the claw) to transition from the hidden configuration to the visible configuration.

[0041] In the visible configuration, the prop **30** may contact or come very close to contacting certain features of the ride vehicle **20**. For example, as shown in FIG. **3**, the prop **30** may contact the roof of the ride vehicle **20**. Thus, the movement of the prop **30** in coordination with the show effects **58** may create an illusion of continuity and the passenger **90** may perceive that the dragon, as depicted by the animated figure, is above the ride vehicle **20** and gripping the ride vehicle **20** via its claws while in flight. As such, the systems and methods described herein may enhance the attraction experience of the passenger **90** by providing the illusion of the animated figures and/or other show effects **58** engaging, contacting, and/or interacting with the ride vehicle **20** in coordination with the show element **11**.

[0042] As another example, FIG. **4** is a top view of the ride vehicle **20** with the display **68** and the show element **11** actuating between the hidden configuration (shown in solid lines) and the visible configuration (shown in dashed lines) relative to the display **68**, in accordance with embodiments of the present disclosure. As illustrated, the ride vehicle **20** may be carrying a number of passengers **90** and may include the show element **11**, which may include the actuator **28** and the prop **30**. Additionally, in the illustrated embodiment, the ride vehicle **20** may include the display **68**. The actuator **28** of the show element **11** may be positioned behind the display **68** such that the prop **30** may be hidden from view of the passengers **90** in the hidden configuration and then moved into view in the visible configuration. Accordingly, the attraction control system **50** and/or the ride vehicle control system **60** may cause display of media data (e.g., image data, video data) on the display **68** and/or other show effects **58** in coordination with the show element **11**. As illustrated in FIG. **4**, the show element **11** may begin in the hidden configuration not in view of the passengers **90**. Additionally, the prop **30** may include an appendage, such as a prop that looks like a hand of a creature.

[0043] As an example, at any suitable time before, during, and/or after the ride cycle, as illustrated in FIG. **5**, the display **68** may be used to display a creature. The creature may appear to be reaching toward the edge of a wall of the ride vehicle **20**. As the creature's arm approaches the edge of the display **68**, the prop **30** may be actuated to simultaneously appear on the side of the display **68**. Indeed, the ride vehicle control system **60** may actuate the actuator **28** to move the prop **30** (e.g., the prop that looks like the hand) to transition from the hidden configuration to the visible configuration.

[0044] In the visible configuration, the prop **30** may contact or come very close to contacting certain features of the ride vehicle **20**. For example, as shown in FIG. **5**, the prop **30** may contact the side wall of the ride vehicle **20**. Thus, the movement of the prop **30** in coordination with the show effects **58** displayed on the display **68** may create the illusion of continuity and the passengers may perceive that the creature, as depicted by the display **68**, is gripping the side wall of the ride vehicle **20**. It should be noted that although the creature is described as gesturing toward a lateral side of the display **68**, any suitable figure may be presented in the media as gesturing toward any

suitable direction of the display **68**, such as a top and/or a bottom side. Therefore, the show element **11** may be positioned in any suitable location to transition to the visible configuration in any suitable area (e.g., in synchronization with the media presented on the display **68**).

[0045] In an embodiment, the display **68** may be used to display the creature, which may appear to be shaking (e.g., moving) the ride vehicle **20**. The attraction control system **50** and/or the ride vehicle control system **60** may cause the actuator **28** to transition the prop **30** into the view of the passengers **90**. Additionally or alternatively, the attraction control system **50** and/or the ride vehicle control system **60** may cause the ride vehicle **20** to move forward, backward, and/or side to side. In this manner, the attraction **12** may create the illusion of manipulation of the ride vehicle **20** by the creature on the display **68**. Indeed, the attraction control system **50** and/or the ride vehicle control system **60** may cause the ride vehicle **20** to move in synchronization with and based on the show effect **58** displayed on the display **68**. In this manner, the systems and methods described herein may provide the unique visual experience for the passengers **90** by enabling coordination of the show element **11** and the show effects **58** that cumulatively create a perception of interaction between the show elements **11** and the ride vehicle **20** via the show element **11** integrated with the ride vehicle **20**.

[0046] While only certain features of the disclosure have been illustrated and described herein, many modifications and changes will occur to those skilled in the art. It is, therefore, to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the disclosure.

[0047] The techniques presented and claimed herein are referenced and applied to material objects and concrete examples of a practical nature that demonstrably improve the present technical field and, as such, are not abstract, intangible or purely theoretical. Further, if any claims appended to the end of this specification contain one or more elements designated as “means for (perform)ing (a function) . . . ” or “step for (perform)ing (a function) . . . ”, it is intended that such elements are to be interpreted under 35 U.S.C. 112(f). However, for any claims containing elements designated in any other manner, it is intended that such elements are not to be interpreted under 35 U.S.C. 112(f).

Claims

1. A ride system, comprising: a ride vehicle; a show element coupled to the ride vehicle, wherein the show element comprises an actuator coupled to a prop; and a control system configured to: generate one or more show effects for the ride system; instruct the actuator to actuate the prop, wherein actuating the prop causes the prop to move from a hidden configuration to a visible configuration; and coordinate display of the one or more show effects with the prop transitioning to the visible configuration.

2. The ride system of claim 1, comprising one or more sensors configured to detect a position of the one or more show effects, a position of the show element, or both, and provide sensor data indicative of the position of the one or more show effects, the position of the show element, or both, to the control system.

3. The ride system of claim 2, wherein the control system is configured to determine the show element is in an expected location.

4. The ride system of claim 2, wherein the one or more sensors comprise a positional sensor, a contact sensor, a motion sensor, an image sensor, or any combination thereof.

5. The ride system of claim 1, wherein the control system is configured to coordinate the display of the one or more show effects with the prop transitioning to the visible configuration based on a predetermined program.

6. The ride system of claim 1, wherein the ride vehicle comprises a display, and wherein the control system is configured to generate image data and transmit the image data to the display.

7. The ride system of claim 6, wherein: the display is configured to display one or more images

based on the image data; and the control system is configured to instruct actuation of the show element via the actuator based at least in part on the one or more images displayed on the display.

8. The ride system of claim 1, wherein the control system is located onboard the ride vehicle.

9. The ride system of claim 1, the control system is configured to coordinate the display of the one or more show effects and the prop transitioning to the visible configuration while the ride vehicle is moving, while the ride vehicle is stationary, or both.

10. The ride system of claim 1, wherein the control system is configured to instruct the actuator to actuate the prop from the visible configuration to the hidden configuration.

11. The ride system of claim 1, wherein the actuator is configured to actuate the prop up, down, forward, backward, outward, inward, or any combination thereof relative to a viewing area of the ride vehicle.

12. The ride system of claim 1, wherein the prop comprises an appendage of an animated figure.

13. The ride system of claim 1, wherein the show element is positioned on a top portion of the ride vehicle, a bottom portion of the ride vehicle, a side portion of the ride vehicle, or any combination thereof.

14. A tangible, non-transitory, computer-readable medium, comprising instructions that, when executed by a processor, are configured to cause the processor to: generate a show effect; instruct an actuator to actuate a prop, wherein actuating the prop causes the prop to move from a hidden configuration to a visible configuration based on the show effect; and coordinate display of the show effect with the prop transitioning to the visible configuration.

15. The tangible, non-transitory, computer-readable medium of claim 14, wherein the instructions are configured to cause the processor to receive sensor data from one or more sensors.

16. The tangible, non-transitory, computer-readable medium of claim 15, wherein the instructions are configured to cause the processor to instruct the actuator to actuate the prop based on the sensor data.

17. The tangible, non-transitory, computer-readable medium of claim 14, wherein the instructions are configured to cause the processor to transmit image data to a display to cause display of one or more images.

18. The tangible, non-transitory, computer-readable medium of claim 17, wherein the instructions are configured to cause the processor to instruct the actuator to actuate the prop in coordination with the display of the one or more images.

19. A ride system, comprising: a ride vehicle, comprising: one or more show elements, the one or more show elements comprising one or more actuators coupled to one or more props; and one or more displays; and a control system comprising a processing system and a memory, the memory encoded with instructions configured to be executed by the processor to cause the attraction control system to: generate one or more show effects for the ride system, wherein the one or more show effects comprise image data; transmit the image data to the one or more displays to cause display of one or more images; and actuate the one or more props via the one or more actuators in coordination with the display of the one or more images.

20. The ride system of claim 19, wherein the instructions are configured to be executed by the processor to cause the control system to coordinate the one or more images with actuation of the one or more props.