

CLAIMS:

1. A virtual queue system, comprising:
a virtual queue controller comprising a processor and a memory, wherein the processor is configured to execute instructions accessed from the memory to cause the virtual queue controller to:
 - receive an indication of a reduced capacity event from an amusement park attraction;
 - determine a reduction in capacity of the attraction associated with the reduced capacity event;
 - identify each guest having a return time in a virtual queue of the attraction that is affected by the reduced capacity event based on the reduction in capacity;
 - remove guests having affected return times from the virtual queue;
 - generate a reaccommodation time slot for the guests removed from the virtual queue, wherein a length of the reaccommodation time slot is based on a total number of affected return times of the guests removed from the virtual queue, and wherein the reaccommodation time slot is subsequent to all of the affected return times;
 - select two or more updated return times within the reaccommodation time slot for each of the guests removed from the virtual queue;
 - provide a notification to each guest removed from the virtual queue requesting guest input to select a single updated return time from the two or more updated return times; and
 - return each guest to the virtual queue upon receiving a corresponding selection of the single updated return time.

2. The virtual queue system of claim 1, wherein the reduced capacity event comprises a downtime event for the attraction.
3. The virtual queue system of claim 1, wherein the reduced capacity event comprises a partial shutdown, wherein at least one ride vehicle, ride seat, or some combination thereof is taken out of operation during the partial shutdown.
4. The virtual queue system of claim 3, wherein the reduced capacity event comprises removal of the at least one ride vehicle from the attraction, and wherein a number of the affected return times is based on a number of seats in the ride vehicle.
5. The virtual queue system of claim 4, wherein the affected return times comprise a subset of all return times scheduled during the reduced capacity event.
6. The virtual queue system of claim 1, wherein the virtual queue controller comprises communications circuitry configured to communicate the notification to respective guest-associated devices of each guest removed from the virtual queue.
7. The virtual queue system of claim 1, wherein the reaccommodation time slot is subsequent to an estimated end of the reduced capacity event.
8. The virtual queue system of claim 1, wherein the reaccommodation time slot is concurrent with the reduced capacity event.
9. The virtual queue system of claim 1, wherein the virtual queue controller is configured to estimate an amount of no-show return times for the amusement park attraction based at least in part on historical data and current virtual queue data, wherein at least a portion of the reaccommodation time slot comprises excess capacity return times configured to fill predicted no show return times after the reduced capacity event ends.

10. The virtual queue system of claim 1, wherein the virtual queue controller is configured to identify the affected return times by determining a reduced capacity of the attraction associated with the reduced capacity event and determining that a relationship between existing return times in a time window and the reduced capacity is outside of a desired tolerance.

11. The virtual queue system of claim 1, wherein a number of the affected return times in a time window is based on reducing existing return times in the time window such that a relationship between existing return times in a time window and the reduced capacity is within a desired tolerance after a reduction in existing return times in the time window.

12. A virtual queue system, comprising:
an amusement park attraction comprising a capacity based on a number of available guest seats;
a virtual queue controller comprising a processor and a memory, wherein the virtual queue controller is configured to:
output a notification to reduce guest admittance to the amusement park attraction from a virtual queue based at least in part on a reduced capacity event associated with a reduction in the number of the available guests seats during the reduced capacity event;
identify guests having affected return times in the virtual queue, wherein the affected return times are associated with return times to the amusement park attraction during the reduced capacity event;
remove at least one guest having one of the affected return times from the virtual queue;
generate a reaccommodation space in the virtual queue;
provide a guest notification to a guest-associated device associated with the at least one guest removed from the virtual queue, the

guest notification indicating removal from the virtual queue and a plurality of new return times corresponding to the reaccommodation space;
receive a selection notification of a selection of one new return time of the plurality of new return times by the guest via the guest-associated device; and
validate the selected new return time when presented for entry at or later than the new return time; and
a sensor assembly positioned at an entrance of the amusement park attraction and configured to receive information from the guest-associated device and send the information from the guest associated device to the virtual queue controller for validating.

13. The virtual queue system of claim 12, wherein the plurality of new return times are scheduled for a time subsequent to the reduced capacity event.

14. The virtual queue system of claim 12, wherein the reduced capacity event comprises a loss of available guest seats of a single ride vehicle.

15. The virtual queue system of claim 12, wherein the at least one guest removed from the virtual queue comprises a subset of a group of guests having a same return time such that only some guests having the same return time are removed from the virtual queue.

16. The virtual queue system of claim 12, wherein the reaccommodation space is based at least in part on a total number of guests removed from the virtual queue

17. A method, comprising:
receiving an indication of a reduced capacity event;
determining a reduction in guest throughput for an amusement park attraction during the reduced capacity event;
determining, based on the reduction in guest throughput, a total number of virtual

queue return times for guests in a virtual queue affected by the reduced capacity event;
identifying each individual guest with an affected virtual queue return time;
generating a reaccommodation time slot in the virtual queue, wherein a size of the reaccommodation time slot is based on the total number of virtual queue return times for guests in the virtual queue affected by the reduced capacity event; and
providing notifications to each of the individual guests with affected virtual queue return times indicating a plurality of available new return times in the reaccommodation time slot.

18. The method of claim 17, comprising outputting a delay message, wherein the delay message comprises a request for confirmation from an individual guest to choose and confirm the new return time, and providing a notification to the individual guest indicating the new return time in response to receiving confirmation from the individual guest.

19. The method of claim 17, wherein a type of the reduced capacity event comprises shutting down operation of the amusement park attraction.

20. The method of claim 17, wherein the reduced capacity event comprises a partial shutdown, wherein at least one ride vehicle of the amusement park attraction, a ride seat of the amusement park attraction, or some combination thereof is taken out of operation during the partial shutdown.