CLAIMS

What is claimed is:

1. A method of dispatching a plurality of trackless vehicles, comprising:

determining, by a controller, if a predetermined amount of time has passed since the controller dispatched a first one of the plurality of trackless vehicles onto one of a predefined plurality of intersecting paths;

if the predetermined amount of time has passed:

determining, by the controller, if a second one of the plurality of trackless vehicles was available for dispatch onto one of the one predefined path and another of the predefined plurality of intersecting paths; and

if the second trackless vehicle was available for dispatch, dispatching the second trackless vehicle; and

if the second trackless vehicle was not available for dispatch, dispatching a third one of the plurality of trackless vehicles onto one of the one predefined path and another of the predefined plurality of intersecting paths.

2. The method of claim 1, wherein the predetermined amount of time is calculated based on a time interval on which the trackless vehicles are dispatched onto the predefined plurality of intersecting paths.

3. The method of claim 2, wherein the time interval is fixed or variable.

4. The method of claim 1, wherein the destination of the plurality of trackless vehicles upon dispatch is a staging area prior to the predefined path.

5. The method of claim 1, wherein the third trackless vehicle is stationed at a location separate from the second trackless vehicle.

6. A method of dispatching a plurality of trackless vehicles, comprising:

transmitting, from a controller, a first instruction to a first one of the plurality of trackless vehicles to begin travel at a predefined time along one of a plurality of predefined intersecting paths;

transmitting, at the end of the one of the predefined intersecting paths, a second instruction to the first one of the plurality of trackless vehicles to travel along a second one of a plurality of predefined intersecting paths.

7. The method of claim 6, wherein the predefined time is established according to a predefined time interval.

8. The method of claim 7, wherein the predefined time interval is fixed or variable.

9. The method of claim 6, wherein the first instruction is based on a predefined time interval and the second instruction is based on predefined event conditions.

10. The method of claim 6, wherein the second one of a plurality of predefined intersecting paths leads to at least one of a first and a second station.

11. The method of claim 6, wherein the trackless vehicle is a ride vehicle; and

if the ride vehicle carried passengers into the ride:

the ride vehicle proceeds to the first station for passenger unloading; and

if the ride vehicle did not carry passengers into the ride:

the ride vehicle proceeds to the first station or the second station, wherein the first and second stations are different stations.

12. The method of claim 11, wherein the second station is a passenger loading station.

13. A system configured to maximize a number of trackless vehicles traveling through a predetermined area at a given time, comprising:

a plurality of trackless vehicles, each configured to automatically navigate along any of a plurality of pre-programmed intersecting paths;

a first station configured to receive at least a first one of the plurality of trackless vehicles;

a second station configured to receive at least a second one of the plurality of trackless vehicles;

a controller configured to periodically dispatch trackless vehicles into the predetermined area in accordance with a predetermined time interval,

wherein, in order to maximize the number of trackless vehicles in the predetermined area at a given time, either:

the first one of the plurality of trackless vehicles begins to navigate along a first subset of the plurality of pre-programmed intersecting paths at a predetermined time in accordance with the time interval, or

the second one of the plurality of trackless vehicles begins to navigate along a second subset of the plurality of pre-programmed intersecting paths at the predetermined time in accordance with the time interval.

14. The system of claim 13, wherein the time interval is fixed or variable.

15. The system of claim 13, further comprising a third station, wherein the second one of the plurality of trackless vehicles begins to navigate along a third subset of the plurality of pre-programmed intersecting paths to the third station at the predetermined time in accordance with the time interval.

16. The system of claim 13, wherein the first and second stations are the same station.

17. The system of claim 13, wherein an order of departure of more than one trackless vehicles from the first station is not dependent on an order of arrival of the more than one trackless vehicles at the first station.

18. The system of claim 13, wherein an order of departure of more than one trackless vehicles from the second station is not dependent on an order of arrival of the more than one trackless vehicles at the second station.

19. The system of claim 13, wherein the controller dispatches one or more of the plurality of the trackless vehicles into the show area at the same time.

20. The system of claim 13, wherein the first and second stations are each comprised of multiple slots, each slot configured to receive one of the plurality of trackless vehicles.

CLAIMS

1. A method of controlling a plurality of trackless vehicles, comprising:

controlling, by a controller, a number of trackless vehicles within a first predefined area in order to achieve a throughput value,

wherein the controlling comprises:

establishing a time interval based on the throughput value;

dispatching one of the plurality of trackless vehicles into the first predefined area at a beginning of each time interval;

routing each of the number of trackless vehicles within the first predefined area along a dynamic path based on its position in the first predefined area and a remaining time within the time interval since its dispatch into the first predefined area;

determining, by the controller, if a first amount of time has passed since the controller routed one of the plurality of trackless vehicles from a second predefined area onto one of a plurality of paths leading to the first predefined area,

wherein the first amount of time is based on the time interval and the number of trackless vehicles in the plurality of trackless vehicles outside of the first predefined area, and

when the first amount of time has passed:

determining, by the controller, a next available one of the plurality of trackless vehicles available for dispatch from the second predefined area onto one of the plurality of paths leading to the first predefined area; and

dispatching the next available one of the plurality of trackless vehicles onto one of the plurality of paths leading to the first predefined area.

2. The method of claim 1, wherein the time interval is fixed or variable.

3. The method of claim 1, wherein the destination of the plurality of trackless vehicles upon dispatch from the second predefined area is a staging area prior to the first predefined area.

4. The method of claim 1, wherein the next available trackless vehicle is positioned, prior to routing, at a location separate from a previously routed trackless vehicle's position prior to routing.

5. A system to maximize a number of trackless vehicles traveling through a first predefined area during a given time period, the system comprising:

a plurality of trackless vehicles, each configured to dynamically navigate the first predefined area;

a first station in a second predefined area to receive at least one of the plurality of trackless vehicles; and

a controller to periodically route trackless vehicles from the first station towards the first predefined area in accordance with a first time interval,

wherein, either:

a first one of the plurality of trackless vehicles begins to navigate along a first one of a plurality of paths leading to the first predefined area at the first time interval, or

a next available one of the plurality of trackless vehicles begins to navigate along a second one of the plurality of paths leading to the first predefined area at the first time interval,

wherein the controller controls the plurality of trackless vehicles within the first predefined area in order to achieve a throughput value, and

wherein the controlling comprises:

establishing a second time interval based on the throughput value;

dispatching one of the plurality of trackless vehicles into the first predefined area at a beginning of each second time interval; and

routing each of the plurality of trackless vehicles within the first predefined area along a dynamic path based on its position in the first predefined area and a remaining time within the second time interval since its dispatch into the first predefined area.

6. The system of claim 5, wherein the time interval is fixed or variable.

7. The system of claim 8, further comprising:

a third station,

wherein one of the plurality of trackless vehicles begins to navigate along a third one of the plurality of paths to the third station at the first time interval.

8. The system of claim 5, further comprising:

a second station to receive at least one of the plurality of trackless vehicles.

9. The system of claim 5, wherein an order of departure of trackless vehicles from the first station is not dependent on an order of arrival of the trackless vehicles at the first station.

10. The system of claim 8, wherein an order of departure of trackless vehicles from the second station is not dependent on an order of arrival of the trackless vehicles at the second station.

11. The system of claim 5, wherein the controller dispatches one or more of the plurality of the trackless vehicles into the first predefined area at the same time.

12. The system of claim 8, wherein the first and second stations each comprise multiple slots, and wherein each slot is configured to receive one of the plurality of trackless vehicles.

13. The method of claim 1, wherein the routing each of the number of trackless vehicles within the first predefined area includes an initial path set at the time of dispatching into the first predefined area.

14. The system of claim 5, wherein the routing each of the plurality of trackless vehicles within the first predefined area includes an initial path set at the time of dispatching into the first predefined area.