for the other route when not receiving an entry permission order for a certain time from a start of the transmission of the entry permission request, and enter the other route when receiving the entry permission order from the block controller, and the alternative target searching unit may determine that the travel route of the first traveling vehicle has been changed when the block controller has transmitted the entry permission order for the other route. In this configuration, the timing when the travel route of the first traveling vehicle has been changed can be appropriately acquired.

[0011] In the traveling vehicle system according to an aspect of the present invention, the alternative target searching unit may periodically search for the second traveling vehicle. In this configuration, the number of opportunities to reconsider the traveling vehicle to execute the conveyance command can be increased.

Advantageous Effects of Invention

[0012] According to an aspect of the present invention, conveyance efficiency in the traveling vehicle can be improved.

Brief Description of Drawings

[0013] FIG. 1 is a block diagram illustrating a configuration of a traveling vehicle system according to an embodiment.

FIG. 2 is a functional block diagram illustrating a functional configuration of the traveling vehicle system of FIG. 1.

FIG. 3 is a diagram for illustrating block control, block avoidance control, and conventional alternative control.

FIG. 4 is a sequence diagram of the block control and the block avoidance control.

CLAIMS

[Claim 1] A traveling vehicle system comprising:

a travel path including a branching part and on which a traveling vehicle travels in one direction;

a plurality of traveling vehicles configured to travel along the travel path and to deliver an article to and from a placement part provided along the travel path; and

a traveling vehicle controller configured to cause the traveling vehicles to travel in accordance with a travel route searched for based on a conveyance command for conveying the article,

the traveling vehicle controller includes:

an alternative target searching unit configured to search, at a timing when the travel route of a first traveling vehicle as the traveling vehicle allocated with the conveyance command has been changed, a second traveling vehicle as the traveling vehicle capable of arriving at a destination included in the conveyance command in a shorter time than the first traveling vehicle does out of the traveling vehicles not conveying an article; and

an alternative controller configured to reallocate the conveyance command from the first traveling vehicle to the second traveling vehicle when the second traveling vehicle has been identified by the alternative target searching unit.

[Claim 2] The traveling vehicle system according to claim 1, wherein

the traveling vehicle controller includes a block controller configured to execute block control blocking entry of the first traveling

vehicle into the branching part when travel on one route included in the travel route of the first traveling vehicle is not permitted at the branching part and block avoidance control releasing the block control by causing the first traveling vehicle to travel on another route when the block control is being executed, and

the alternative target searching unit determines that the travel route of the first traveling vehicle has been changed when the block avoidance control has been executed.

[Claim 3] The traveling vehicle system according to claim 2, wherein

the traveling vehicle repeatedly transmits an entry permission request for the one route to the block controller on an upstream side of the branching part, transmits an entry permission request for the other route when not receiving an entry permission order for a certain time from a start of the transmission of the entry permission request, and enters the other route when receiving the entry permission order from the block controller, and

the alternative target searching unit determines that the travel route of the first traveling vehicle has been changed when the block controller has transmitted the entry permission order for the other route.

[Claim 4] The traveling vehicle system according to any one of claims 1 to 3, wherein the alternative target searching unit periodically searches for the second traveling vehicle.

[Claim 5] A method for controlling a traveling vehicle in a traveling vehicle system including: a travel path including a branching part and on which a traveling vehicle travels in one direction; a plurality of traveling

vehicles configured to travel along the travel path and to deliver an article to and from a placement part provided along the travel path; and a traveling vehicle controller configured to cause the traveling vehicles to travel based on a travel route searched for based on a conveyance command for conveying the article, the method comprising:

identifying, at a timing when the travel route of a first traveling vehicle as the traveling vehicle allocated with the conveyance command has been changed, a second traveling vehicle as the traveling vehicle capable of arriving at a destination included in the conveyance command in a shorter time than the first traveling vehicle does out of the traveling vehicles not conveying an article; and

reallocating the conveyance command from the first traveling vehicle to the second traveling vehicle.