

CLAIMS

[Claim 1]

A park-and-ride detection system for detecting use of park-and-ride, the park-and-ride detection system comprising:

5 a park-and-ride detection device configured to detect the use of the park-and-ride,

wherein the park-and-ride detection device includes:

a park-and-ride start determination unit configured to determine that the use of the park-and-ride has started if a time from a use start time of a parking lot to a use start
10 time of a public transportation facility for the same user is within an allowed time preset in anticipation of a movement time from the parking lot to a place to get in or out of the public transportation facility.

[Claim 2]

The park-and-ride detection system according to claim 1, further comprising:

15 a public transportation facility device configured to process information about use of the public transportation facility,

wherein the public transportation facility device includes:

a public transportation facility data transmission unit, if the use of the public transportation facility has started, transmits public transportation facility data
20 representing at least the place to get in or out of the public transportation facility the use of which has started, the user of the public transmission facility, and the use start time of the public transportation facility to the park-and-ride detection device,

wherein the park-and-ride detection device further includes:

a public transportation facility data reception unit configured to receive the
25 public transportation facility data transmitted from the public transportation facility

device, and

wherein the park-and-ride start determination unit of the park-and-ride detection device determines that the use of the park-and-ride has started if the time from the use start time of the parking lot to the use start time of the public transportation facility represented by the public transportation facility data for the user represented by the public transportation facility data received by the public transportation facility data reception unit is within the allowed time preset in anticipation of the movement time from the parking lot to the place to get in or out of the public transportation facility represented by the public transportation facility data.

10 [Claim 3]

The park-and-ride detection system according to claim 1 or 2, further comprising:

a parking lot device configured to process information about use of the parking lot,

15 wherein the parking lot device includes:

a parking lot use start data transmission unit configured to transmit parking lot use start data representing at least the parking lot the use of which has started, the user of the parking lot, and the use start time of the parking lot to the park-and-ride detection device if the use of the parking lot has started,

20 wherein the park-and-ride detection device further includes:

a parking lot use start data reception unit configured to receive the parking lot use start data transmitted from the parking lot device, and

25 wherein the park-and-ride start determination unit of the park-and-ride detection device determines that the use of the park-and-ride has started if the time from the use start time of the parking lot represented by the parking lot use start data to the use start

time of the public transportation facility for the user represented by the parking lot use start data received by the parking lot use start data reception unit is within the allowed time preset in anticipation of the movement time from the parking lot represented by the parking lot use start data to the place to get in or out of the public transportation facility.

5 [Claim 4]

The park-and-ride detection system according to claim 3, wherein the park-and-ride detection device further includes:

a park-and-ride end determination unit configured to determine that the use of the park-and-ride has ended if the use of the parking lot by the user of the park-and-ride
10 has ended.

[Claim 5]

The park-and-ride detection system according to claim 4,
wherein the parking lot device further includes:

a parking lot use end data transmission unit configured to transmit parking lot
15 use end data representing at least the user of the parking lot to the park-and-ride detection device if the use of the parking lot has ended,

wherein the park-and-ride detection device further includes:

a parking lot use end data reception unit configured to receive the parking lot
use end data transmitted from the parking lot device, and

20 wherein the park-and-ride end determination unit of the park-and-ride detection device determines that the use of the park-and-ride by the user of the parking lot represented by the parking lot use end data received by the parking lot use end data reception unit has ended.

[Claim 6]

25 A park-and-ride detection device for detecting use of park-and-ride, the

park-and-ride detection device comprising:

a park-and-ride start determination unit configured to determine that the use of the park-and-ride has started if a time from a use start time of a parking lot to a use start time of a public transportation facility for the same user is within an allowed time preset in anticipation of a movement time from the parking lot to a place to get in or out of the public transportation facility.

[Claim 7]

A control method of controlling a park-and-ride detection device for detecting use of park-and-ride, the control method comprising:

a park-and-ride start determination step of determining that the use of the park-and-ride has started if a time from a use start time of a parking lot to a use start time of a public transportation facility for the same user is within an allowed time preset in anticipation of a movement time from the parking lot to a place to get in or out of the public transportation facility.

[Claim 8]

A program for use in a park-and-ride detection device for detecting use of park-and-ride for causing the park-and-ride detection device to function as:

a park-and-ride start determination unit configured to determine that the use of the park-and-ride has started if a time from a use start time of a parking lot to a use start time of a public transportation facility for the same user is within an allowed time preset in anticipation of a movement time from the parking lot to a place to get in or out of the public transportation facility.

CLAIMS

1. A park-and-ride detection system for detecting use of park-and-ride, the park-and-ride detection system comprising:

a parking lot device configured to process information about use of a plurality of parking lots,

a public transportation facility device configured to process information about use of a plurality of the public transportation facilities, and

a park-and-ride detection device configured to detect the use of the park-and-ride, wherein the parking lot device is provided in each of a plurality of the parking lots, wherein the public transportation facility device is provided in each of a plurality of places to get in or out of the public transportation facilities,

wherein the parking lot device includes a parking lot use start data transmission unit, wherein if the use of one of a plurality of parking lots has started, the parking lot use start data transmission unit transmits parking lot use start data representing at least the one of a plurality of parking lots, the user of the one of a plurality of parking lots, and the use start time of the one of a plurality of parking lots to the park-and-ride detection device,

wherein the public transportation facility device includes a public transportation facility data transmission unit,

wherein if the use of one of a plurality of the public transportation facilities has started, transmits public transportation facility data representing at least the place to get in or out of the one of a plurality of the public transportation facilities, the user of the one of a plurality of the public transportation facilities, and the use start time of the one of a plurality of the public transportation facilities to the park-and-ride detection device,

wherein the park-and-ride detection device includes:

a park-and-ride start determination unit configured to determine the start of the use of the park-and-ride,

a public transportation facility data reception unit configured to receive the public transportation facility data transmitted from the public transportation facility device,

a parking lot use start data reception unit configured to receive the parking lot use start data transmitted from the parking lot device, and

an allowed time information storage unit configured to store a plurality of allowed times preset in anticipation of a movement time from the parking lots to places to get in or out of the public transportation facility associated with each of the parking lots and each of

the places to get in or out of the public transportation facilities, and

wherein the park-and-ride start determination unit of the park-and-ride detection device determines that the use of the park-and-ride has started if a time from a use start time of the one of a plurality of parking lots represented by the parking lot use start data for the user represented by the parking lot use start data received by the parking lot use start data reception unit to the use start time of the one of a plurality of the public transportation facilities represented by the public transportation facility data for the same user received by the public transportation facility data reception unit is within the allowed time read from the allowed time information storage unit associated with the one of a plurality of parking lots represented by the parking lot use start data and the place to get in or out of the one of a plurality of the public transportation facilities represented by the public transportation facility data.

2. The park-and-ride detection system according to claim 1,
 wherein the parking lot use start data represents at least
 a parking lot identifier (ID) for uniquely identifying each used parking lot among a plurality of parking lots,
 a user ID for uniquely identifying each user of parking lots, and
 a use start time of the parking lots,
 wherein the public transportation facility data representing at least
 the place to get in or out ID for uniquely identifying each place to get in or out, and
 a use start time of the places to get in or out,
 wherein the park-and-ride detection device further includes a park-and-ride information storage unit configured to associate and store the user ID, the parking lot ID, the place to get in or out ID, a use start time of the parking lots, and a use start time of the places to get in or out,

wherein automatic fare adjustment machines are provided in the parking lots respectively which read the user ID recorded on the IC card of the user, and output parking lot use start data representing the read user ID to the parking lot device, and

wherein automatic ticket machines are provided in the places to get in or out which reads the user ID recorded on the IC card of the user, and outputs the public transportation facility data representing the read user ID to the public transportation facility device.

3. The park-and-ride detection system according to claim 1 or 2, wherein the park-and-

ride detection device further includes:

a park-and-ride end determination unit configured to determine that the use of the park-and-ride has ended if the use of the parking lot by the user of the park-and-ride has ended.

4. The park-and-ride detection system according to claim 3,
wherein the parking lot device further includes:

a parking lot use end data transmission unit configured to transmit parking lot use end data representing at least the user of the parking lot to the park-and-ride detection device if the use of the parking lot has ended,

wherein the park-and-ride detection device further includes:

a parking lot use end data reception unit configured to receive the parking lot use end data transmitted from the parking lot device, and

wherein the park-and-ride end determination unit of the park-and-ride detection device determines that the use of the park-and-ride by the user of the parking lot represented by the parking lot use end data received by the parking lot use end data reception unit has ended.

5. A park-and-ride detection device for detecting use of park-and-ride, the park-and-ride detection device comprising:

a park-and-ride start determination unit configured to determine the start of the use of the park-and-ride,

a public transportation facility data reception unit configured to receive the public transportation facility data representing at least the place to get in or out of one of a plurality of the public transportation facilities the use of which has started, the user of the one of a plurality of the public transportation facilities, and the use start time of the one of a plurality of the public transportation facilities transmitted from a plurality of public transportation facility devices,

a parking lot use start data reception unit configured to receive the parking lot use start data representing at least one of a plurality of parking lots the use of which has started, the user of the one of a plurality of parking lots, and the use start time of the one of a plurality of parking lots transmitted from a plurality of parking lot devices, and

an allowed time information storage unit configured to store a plurality of allowed times preset in anticipation of a movement time from the parking lots to places to get in or

out of the public transportation facility associated with each of the parking lots and each of the places to get in or out of the public transportation facility,

wherein the park-and-ride start determination unit determines that the use of the park-and-ride has started if a time from a use start time of the one of a plurality of parking lots represented by the parking lot use start data for the user represented by the parking lot use start data received by the parking lot use start data reception unit to the use start time of the one of a plurality of the public transportation facilities represented by the public transportation facility data for the same user received by the public transportation facility data reception unit is within the allowed time read from the allowed time information storage unit associated with the one of a plurality of parking lots represented by the parking lot use start data and the place to get in or out of the one of a plurality of the public transportation facilities represented by the public transportation facility data.