CLAIMS

1. A vehicle position measurement device comprising:

a positioning processing unit that estimates a current position of a vehicle;

a positioning information storing unit that accumulates and stores the position of the vehicle estimated by the positioning processing unit in association with an estimated time;

a communication unit that receives a signal transmitted from a communication device installed at a fixed location, and detects, based on the signal received, a position of the vehicle at a time when the signal is received; and

an updating unit that updates, based on the position of the vehicle detected by the communication unit, the position of the vehicle stored in the positioning information storing unit in association with a time at and after the time when the signal is received by the communication unit.

2. The vehicle position measurement device according to claim 1, wherein the updating unit previously stores a value of time lag generated at the time when the signal is received by the communication unit, and updates, based on the vehicle position detected by the communication unit, the position of the vehicle stored in the positioning information storing unit in association with a time at and after a time obtained by subtracting the value of the time lag from the time when the signal is received by the communication unit.

3. The vehicle position measurement device according to claim 2, wherein to update the position of the vehicle, the updating unit replaces, with the position of the

vehicle detected by the communication unit, the position of the vehicle stored in the positioning information storing unit in association with the time obtained by subtracting the value of the time lag from the time when the signal is received by the communication unit.

4 A vehicle position measurement method comprising:

a positioning processing step of a vehicle position measurement device estimating a current position of a vehicle, the vehicle position measurement device comprising a positioning information storing unit;

a positioning information storing step of the vehicle position measurement device accumulating and storing the position of the vehicle estimated in the positioning processing step in association with an estimated time;

a communication step of the vehicle position measurement device receiving a signal transmitted from a communication device installed at a fixed location, and detecting, based on the signal received, a position of the vehicle at a time when the signal is received; and

an updating step of the vehicle position measurement device updating, based on the position of the vehicle detected in the communication step, the position of the vehicle stored in the positioning information storing unit in association with a time at and after the time when the signal is received in the communication step.

CLAIMS

1. A vehicle position measurement device comprising:

a positioning processing unit that estimates a position of a vehicle at each of a processing target time and a next time to the processing target time, estimates a vector based on the estimated position of the vehicle, and estimates a road direction based on the position and a moving direction of the vehicle at the processing target time;

a positioning information storing unit that accumulates and stores the position of the vehicle estimated by the positioning processing unit in association with an estimated time;

a communication unit that receives a signal transmitted from a communication device installed at a fixed location, and detects, based on the signal received, a position of the vehicle at a time when the signal is received; and

an updating unit that updates, based on the position of the vehicle detected by the communication unit and the vector and the road direction estimated by the positioning processing unit, the position of the vehicle stored in the positioning information storing unit in association with a time at and after the time when the signal is received by the communication unit.

2. The vehicle position measurement device according to claim 1, wherein the updating unit previously stores a value of time lag generated at the time when the signal is received by the communication unit, and updates, based on the vehicle position detected by the communication unit, the position of the vehicle stored in the positioning information storing unit in association with a time at and after a time obtained by subtracting the value of the time lag from the time when the signal is received by the communication unit.

3. The vehicle position measurement device according to claim 2, wherein to update the position of the vehicle, the updating unit replaces, with the position of the vehicle detected by the communication unit, the position of the vehicle stored in the positioning information storing unit in association with the time obtained by subtracting the value of the time lag from the time when the signal is received by the communication unit.

4. A vehicle position measurement method comprising:

a positioning processing step of a vehicle position measurement device estimating a position of a vehicle at each of a processing target time and a next time to the processing

target time, estimating a vector based on the estimated position of the vehicle, and estimating a road direction based on the position and a moving direction of the vehicle at the processing target time, the vehicle position measurement device comprising a positioning information storing unit;

a positioning information storing step of the vehicle position measurement device accumulating and storing the position of the vehicle estimated in the positioning processing step in association with an estimated time;

a communication step of the vehicle position measurement device receiving a signal transmitted from a communication device installed at a fixed location, and detecting, based on the signal received, a position of the vehicle at a time when the signal is received; and

an updating step of the vehicle position measurement device updating, based on the position of the vehicle detected in the communication step and the vector and the road direction estimated by the positioning processing unit, the position of the vehicle stored in the positioning information storing unit in association with a time at and after the time when the signal is received in the communication step.