CLAIMS

1. An on-board unit comprising:

a satellite information acquiring section connected to a first antenna to acquire first time data showing a current time from a satellite signal received from an artificial satellite by the first antenna;

a communication processing section connected to a second antenna, which is different from the first antenna, to acquire second time data showing a current time and received by the second antenna from a radio signal which is different from the satellite signal;

a device configured to output third time data showing the same time as the current time from the first time data; and

a processing section configured to acquire the second time data from the communication processing section and the third time data from the device, and detect a spoofing based on a difference between a time shown by the second time data and a time shown by the third time data.

2. The on-board unit according to claim 1, wherein the processing section determines that the spoofing has been carried out, when the difference between the time shown by the third time data and the time shown by the second time data is equal to or more than a threshold value.

3. The on-board unit according to claim 1 or 2, wherein the communication processing section acquires the second time data by the second antenna from a roadside unit provided on a side of a road on which the vehicle runs.

4. The on-board unit according to claim 1, wherein the communication processing section acquires the second time data through a cellular communication by the second antenna.

5. A spoofing detecting method of an on-board unit, comprising:

acquiring first time data showing a current time from a satellite signal received from an artificial satellite by a first antenna;

acquiring second time data showing a current time from a radio signal, which is different from the satellite signal, by a second antenna which is different from the first antenna;

outputting third time data showing the same time as the current time from the first time data; and

detecting a spoofing based on a difference between a time shown by the third time data and a time shown by the second time data.

6. The spoofing detecting method of the on-board unit according to claim 5, wherein the detecting a spoofing comprises:

determining that the spoofing has been carried out, when the difference between the time shown by the third time data and the time shown by the second time data is equal to or more than a threshold value.

7. The spoofing detecting method of the on-board unit according to claim 5 or 6, wherein the second time data is acquired from a roadside unit provided on a side of a road on which a vehicle runs.

8. The spoofing detecting method of the on-board unit according to claim 5 or 6, wherein the second time data is acquired through a cellular communication by the second antenna.