CLAIMS

1. An on-board unit comprising:

a positioning section configured to output a positioning result showing a current position of a vehicle based on a positioning signal received from an artificial satellite;

a positioning result storage section configured to store the positioning result in relation to a time; and

a processing section configured to detect a spoofing based on whether a movement of the vehicle satisfies a given condition, by using a past positioning result stored in the positioning result storage section and a current positioning result measured by the positioning section.

2. The on-board unit according to claim 1, wherein the given condition is a condition to determine that a spoofing has been carried out, when a speed of the vehicle is equal to or faster than a given threshold value.

3. The on-board unit according to claim 2, wherein the processing section sets the given threshold value according to an area on a map where the vehicle exists.

4. The on-board unit according to claim 1, wherein the processing section determines that the spoofing has been carried out, when an acceleration of the vehicle is equal to or more than a given threshold value.

5. The on-board unit according to claim 1, wherein the processing section determines that the spoofing has been carried out, when an angular speed of the

vehicle is equal to or more than a given threshold value.

6. The on-board unit according to any one of claims 1 to 5, wherein the processing section is configured to collect start-up information showing whether an engine of the vehicle has started up, and determines that the spoofing has been carried out, when the start-up information shows that the engine has not been started up and the positioning result shows that the vehicle is moving.

7. The on-board unit according to any one of claims 1 to 6, wherein the processing section determines that there is a spoofing suspicion, when the movement of the vehicle does not satisfy a given reference, and determines that the spoofing has been carried out when the spoofing suspicion continues for a given period or more.

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

outputting a positioning result showing a current position of a vehicle based on a positioning signal received from an artificial satellite;

storing the positioning result in a storage device in relation to a time; and

detecting a spoofing based on whether a movement of the vehicle satisfies a given condition, by using a past positioning result stored in the positioning result storage section and a current positioning result measured by the positioning section.

CLAIMS

1. An on-board unit comprising:

a positioning section configured to output a positioning result showing a current position of a vehicle based on a positioning signal received from an artificial satellite;

a positioning result storage section configured to store the positioning result in relation to a time; and

a processing section configured to detect a spoofing based on whether a movement of the vehicle satisfies a given condition, by using a past positioning result stored in the positioning result storage section and a current positioning result measured by the positioning section,

wherein the processing section determines that there is a spoofing suspicion, when the movement of the vehicle does not satisfy a given reference, and determines that the spoofing has been carried out when the spoofing suspicion continues for a given period or more.

2. An on-board unit comprising:

a positioning section configured to output a positioning result showing a current position of a vehicle based on a positioning signal received from an artificial satellite;

a positioning result storage section configured to store the positioning result in relation to a time; and

a processing section configured to detect a spoofing based on whether a movement of the vehicle satisfies a given condition, by using a past positioning result stored in the positioning result storage section and a current positioning result measured by the positioning section,

wherein the processing section determines that the spoofing has been carried out, when an acceleration of the vehicle is equal to or more than a given threshold value.

3. The on-board unit according to claim 1 or 2, wherein the given condition is a condition to determine that a spoofing has been carried out, when a speed of the vehicle is equal to or faster than a given threshold value.

4. The on-board unit according to claim 3, wherein the processing section sets the given threshold value according to an area on a map where the vehicle exists.

5. The on-board unit according to claim 1, wherein the processing section determines that the spoofing has been carried out, when an acceleration of the vehicle is equal to or more than a given threshold value.

6. The on-board unit according to claim 1 or 2, wherein the processing section determines that the spoofing has been carried out, when an angular speed of the vehicle is equal to or more than a given threshold value.

7. The on-board unit according to any one of claims 1 to 6, wherein the processing section is configured to collect start-up information showing whether an engine of the vehicle has started up, and determines that the spoofing has been carried out, when the start-up information shows that the engine has not been started up and the positioning result shows that the vehicle is moving.

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

outputting a positioning result showing a current position of a vehicle based on a positioning signal received from an artificial satellite;

storing the positioning result in a storage device in relation to a time; and

detecting a spoofing based on whether a movement of the vehicle satisfies a given condition, by using a past positioning result stored in the positioning result storage section and a current positioning result measured by the positioning section,

wherein the detecting comprises:

determining that there is a spoofing suspicion, when the movement of the vehicle does not satisfy a given reference; and

determining that the spoofing has been carried out when the spoofing suspicion continues for a given period or more.