Claims

[Claim 1]

An abnormality detection device comprising:

a statistical data acquisition unit that acquires statistical data of a GNSS positioning result associated with a position;

a positioning result acquisition unit that acquires an actually measured positioning result which is the GNSS positioning result actually measured based on a GNSS signal and which includes position information; and

a discrimination unit that discriminates an abnormality in the actually measured positioning result based on the statistical data,

wherein the statistical data is a probability distribution of reception intensity in the position,

wherein the statistical data is further associated with a time,

wherein the actually measured positioning result includes an actually measured reception intensity, and

wherein the discrimination unit discriminates the actually measured reception intensity as the abnormality when the actually measured reception intensity is included in the reception intensity in the position in a distribution of a predetermined range from a lower limit of the

probability distribution or in a distribution of a predetermined range from an upper limit of the probability distribution.

[Claim 2]

The abnormality detection device according to claim 1, wherein the discrimination unit includes a comparison unit that compares the actually measured positioning result with the statistical data related to the position information.

[Claim 3]

The abnormality detection device according to claim 1 or 2, wherein the statistical data is further associated with a vehicle type.

[Claim 4]

The abnormality detection device according to any one of claims 1 to 3, further comprising an abnormality mode specifying unit that specifies an abnormality mode of the actually measured positioning result based on the statistical data.

[Claim 5]

An on-board unit comprising:

the abnormality detection device according to any one of claims 1 to 4; and

a reception unit that receives the GNSS signal received by an on-board antenna from a plurality of satellites.

[Claim 6]

An abnormality detection method comprising:

a step of acquiring statistical data of a GNSS positioning result associated with a position;

a step of acquiring an actually measured positioning result which is the GNSS positioning result actually measured based on the GNSS signal and which includes position information; and

a step of discriminating an abnormality in the actually measured positioning result based on the statistical data,

wherein the statistical data is a probability distribution of reception intensity in the position,

wherein the statistical data is further associated with a time,

wherein the actually measured positioning result includes an actually measured reception intensity, and

wherein, in the step of discriminating the abnormality, the actually measured reception intensity is discriminated

as the abnormality when the actually measured reception intensity is included in the reception intensity in the position in a distribution of a predetermined range from a lower limit of the probability distribution or in a distribution of a predetermined range from an upper limit of the probability distribution.

[Claim 7]

A program for causing a computer of an abnormality detection device to execute:

a step of acquiring statistical data of a GNSS positioning result associated with a position;

a step of acquiring an actually measured positioning result which is the GNSS positioning result actually measured based on the GNSS signal and which includes position information; and

a step of discriminating an abnormality in the actually measured positioning result based on the statistical data,

wherein the statistical data is a probability distribution of reception intensity in the position,

wherein the statistical data is further associated with a time,

wherein the actually measured positioning result includes an actually measured reception intensity, and

wherein, in the step of discriminating the abnormality, the actually measured reception intensity is discriminated as the abnormality when the actually measured reception intensity is included in the reception intensity in the position in a distribution of a predetermined range from a lower limit of the probability distribution or in a distribution of a predetermined range from an upper limit of the probability distribution.