CLAIMS

1. A on-board unit that is attached to a vehicle, stores information about the vehicle, and performs a process using the information about the vehicle, the on-board unit comprising:

a state information acquisition unit that acquires state information indicating a state of the on-board unit;

a storage unit management unit that stores the state information in a storage unit when the on-board unit is powered off;

a fault determination unit that determines whether or not state information acquired when the on-board unit is powered on matches the state information stored in the storage unit, and determines a fault when the fault determination unit determines that the state information acquired when the on-board unit is powered on does not match the state information stored in the storage unit; and

an acceleration sensor,

wherein the state information acquisition unit acquires a three-dimensional vector indicating an acceleration detected by the acceleration sensor as the state information, and

the fault determination unit determines a fault when the fault determination unit determines that a sum of a magnitude of change in each of components of the three-dimensional vector between when the on-board unit is powered off and when the on-board unit is powered on is larger than a threshold value.

2. The on-board unit according to claim 1,

wherein the state information acquisition unit further acquires position information of the on-board unit in a horizontal direction as the state information.

3. The on-board unit according to claim 1,

wherein the state information acquisition unit further acquires information indicating a height of a position of the on-board unit as the state information.

4. The on-board unit according to claim 1,

wherein the state information acquisition unit further acquires information indicating a voltage supplied from a power supply to the on-board unit as the state information.

5. The on-board unit according to claim 1,

wherein the state information acquisition unit further acquires information indicating vibration detected by the acceleration sensor as the state information.

6. The on-board unit according to claim 1,

wherein the on-board unit is attached to a windshield of the vehicle.

7. A fault determination method for an on-board unit that is attached to a vehicle, stores information about the vehicle, and performs a process using the information about the vehicle, the fault determination method comprising:

a writing step of storing state information indicating a state of the on-board unit in a storage unit when the on-board unit is powered off; and

a fault determination step of determining whether or not state information acquired when the on-board unit is powered on matches the state information stored in the storage unit, and determining a fault when it is determined that the state information acquired when the on-board unit is powered on does not match the state information stored in the storage unit,

wherein, in the writing step, a three-dimensional vector indicating an acceleration detected by an acceleration sensor included in the on-board unit is stored in the storage unit as the state information, and

in the fault determination step, it is determined that there is a fault when it is determined a sum of a magnitude of change in each of components of the three-dimensional vector between when the on-board unit is powered off and when the on-board unit is powered on is larger than a threshold value.