The present disclosure has been made to solve the above-described problem. An object of the present disclosure is to provide a diagnostic device and a diagnostic analysis device for vertical transportation devices, either of which can obtain information for appropriately diagnosing the vertical transportation devices.

[Solution to Problem]

[0006]

According to an aspect of the present invention, there is provided ~~A~~a diagnostic device for vertical transportation devices according to the present disclosure includes a housing unit defining an outer profile, a storage unit housed in the housing unit and configured to store information, an acceleration detection unit housed in the housing unit and configured to detect, with the housing unit attached to a moving object in a vertical transportation device, acceleration in a vertical direction and acceleration in a horizontal direction of the moving object as diagnostic information of the moving object in the vertical transportation device when the moving object has moved, a camera unit housed in the housing unit and configured to shoot a periphery of the moving object in the vertical transportation device as diagnostic information of the moving object in the vertical transportation device with the housing unit attached to the moving object; and a diagnosis-side control unit housed in the housing unit and configured to cause the storage unit to store information about the acceleration in the vertical direction and information about the acceleration in the horizontal direction, which have been detected by the acceleration detection unit, in association with information about a detection timing, and wherein the diagnostic-side control unit is configured to cause the storage unit to store information about an image shot by the camera unit in association with information about a shooting timing.

[0007]

A diagnostic analysis device for vertical transportation devices according to the present disclosure includes an analysis-side reception unit configured to receive information, an accumulation unit configured to accumulate the information, and an analysis unit configured to cause, when the analysis-side reception unit receives diagnostic information from the diagnostic device, the accumulation unit to accumulate

[CLAIMS]

[Claim 1]

A diagnostic device for vertical transportation devices, comprising:

a housing unit defining an outer profile;

a storage unit housed in the housing unit and configured to store information;

an acceleration detection unit housed in the housing unit and configured to detect, with the housing unit attached to a moving object in a vertical transportation device, acceleration in a vertical direction and acceleration in a horizontal direction of the moving object as diagnostic information of the moving object in the vertical transportation device when the moving object has moved; ~~and~~

a camera unit housed in the housing unit and configured to shoot a periphery of the moving object in the vertical transportation device as diagnostic information of the moving object in the vertical transportation device with the housing unit attached to the moving object; and

a diagnosis-side control unit housed in the housing unit and configured to cause the storage unit to store information about the acceleration in the vertical direction and information about the acceleration in the horizontal direction, which have been detected by the acceleration detection unit, in association with information about a detection timing, and

wherein the diagnosis-side control unit is configured to cause the storage unit to store information about an image shot by the camera unit in association with information about a shooting timing.

[Claim 2]

The diagnostic device for vertical transportation devices according to claim 1, further comprising:

a microphone unit housed in the housing unit and configured to collect a sound around the moving object in the vertical transportation device as diagnostic information of the moving object in the vertical transportation device with the housing unit attached to the moving object,

wherein the diagnosis-side control unit is configured to cause the storage unit to store information corresponding to the sound detected by the microphone unit in association with information about a detection timing.

[Claim 3]

The diagnostic device for vertical transportation devices according to claim 1 or 2, further comprising:

a rotation angle detection unit housed in the housing unit and configured to detect a rotation angle of the moving object in the vertical transportation device as diagnostic information of the moving object in the vertical transportation device with the housing unit attached to the moving object,

wherein the diagnosis-side control unit is configured to cause the storage unit to store information about the rotation angle detected by the rotation angle detection unit in association with information about a detection timing.

~~[Claim 4]~~

~~The diagnostic device for vertical transportation devices according to any one of claims 1 to 3, further comprising:~~

~~a camera unit housed in the housing unit and configured to shoot a periphery of the moving object in the vertical transportation device as diagnostic information of the moving object in the vertical transportation device with the housing unit attached to the moving object,~~

~~wherein the diagnosis-side control unit is configured to cause the storage unit to store information about an image shot by the camera unit in association with information about a shooting timing.~~

[Claim 4~~5~~]

The diagnostic device for vertical transportation devices according to any one of claims 1 to 3~~claim 4~~, wherein the diagnosis-side control unit is configured to determine a direction of the housing unit relative to the moving object in the vertical transportation device based on the information about the image shot by the camera unit.

[Claim 5~~6~~]

The diagnostic device for vertical transportation devices according to any one of claims 1 to 4~~5~~, further comprising:

a position detection unit housed in the housing unit and configured to detect a position of the vertical transportation device with the housing unit attached to the moving object in the vertical transportation device,

wherein the diagnosis-side control unit is configured to set a standard when diagnosing diagnostic information of the moving object in the vertical transportation device based on information about the position detected by the position detection unit.

[Claim 6~~7~~]

The diagnostic device for vertical transportation devices according to any one of claims 1 to 5~~6~~, further comprising:

a display unit housed in the housing unit and configured to display information,

wherein the diagnosis-side control unit is configured to cause the display unit to display information about a position in the vertical direction of the moving object obtained from the information about the acceleration in the vertical direction detected by the acceleration detection unit and other diagnostic information in association with each other.

[Claim 7~~8~~]

The diagnostic device for vertical transportation devices according to any one of claims 1 to 6~~7~~, further comprising:

a diagnosis-side transmission unit housed in the housing unit and configured to transmit information,

wherein the diagnosis-side control unit is configured to cause the diagnosis-side transmission unit to transmit diagnostic information of the moving object in the vertical transportation device.

[Claim 8~~9~~]

A diagnostic analysis device for vertical transportation devices, comprising:

an analysis-side reception unit configured to receive information;

an accumulation unit configured to accumulate information; and

an analysis unit configured to cause, when the analysis-side reception unit receives diagnostic information from the diagnostic device according to claim 7~~8~~, the accumulation unit to accumulate the diagnostic information and to analyze diagnostic information of a moving object in a vertical transportation device based on the accumulated diagnostic information.

[Claim 9~~10~~]

The diagnostic analysis device for vertical transportation devices according to claim 8~~9~~, further comprising:

an analysis-side control unit configured to resample, when the analysis-side reception unit receives diagnostic information from the diagnostic device according to claim 7~~8~~, the diagnostic information and to cause the accumulation unit to accumulate the resampled diagnostic information.

[Claim 10~~1~~]

The diagnostic analysis device for vertical transportation devices according to claim 8~~9~~ or 9~~10~~, further comprising:

an analysis-side transmission unit configured to transmit information, and

a control unit configured to cause the analysis-side transmission unit to transmit information representing an analysis result by the analysis unit toward the diagnostic device.