CLAIMS

1. An in-train monitor system comprising: an information management system that manages monitoring-target condition information output from various devices incorporated in a train; cameras that are incorporated in respective train cars and take images of the devices incorporated in the train; and a transmission device that is connected to an in-train transmission channel of each train car and relays imaging data from the camera to each train car, wherein the in-train monitor system further comprises:

a camera-control central device that is connected to the information management system and the transmission device, monitors the monitoring-target condition information sent from the information management system, determines whether the devices incorporated in the train are in a normal condition, and generates a frame-rate control signal for adjusting a frame rate of imaging data from the camera; and

a camera-control terminal device that is connected to the transmission device and the camera and adjusts a frame rate of imaging data from the camera based on the frame-rate control signal.

2. The in-train monitor system according to claim 1, wherein

when any of the devices incorporated in the train indicates an abnormal condition, the camera-control central device generates the frame-rate control signal for each of the devices incorporated in the train or for each of the cameras, and

the camera-control terminal device adjusts a frame rate of imaging data from the camera for each of the devices incorporated in the train or for each of the

cameras based on the frame-rate control signal.

3. The in-train monitor system according to claim 1 or 2, wherein

when any of the devices incorporated in the train indicates an abnormal condition, the camera-control central device generates an imaging-direction control signal for adjusting an imaging direction for each of the cameras, and

the camera-control terminal device sends the imaging-direction control signal to the camera.

4. The in-train monitor system according to any one of claims 1 to 3, wherein

each of the cameras comprises:

a frame-rate adjusting unit that adjusts a frame rate of imaging data from the camera based on the frame-rate control signal; and

an imaging direction controller that adjusts an imaging direction based on the imaging-direction control signal.

CLAIMS

1. An in-train monitor system comprising: an information management system that manages monitoring-target condition information output from various devices incorporated in a train; cameras that are incorporated in respective train cars and take images of the devices incorporated in the train; and a transmission device that is connected to an in-train transmission channel of each train car and relays imaging data from the camera to each train car, wherein the in-train monitor system further comprises:

a camera-control central device that is connected to the information management system and the transmission device, monitors whether the devices incorporated in the train have changed from one condition to another condition based on the monitoring-target condition information sent from the information management system, and when the devices incorporated in the train have changed from one condition to another condition, generates a frame-rate control signal for increasing a frame rate of imaging data from the camera based on the monitoring-target condition information indicative of the change to another condition; and

a camera-control terminal device that is connected to the transmission device and the camera and adjusts a frame rate of imaging data from the camera based on the frame-rate control signal.

2. The in-train monitor system according to claim 1, wherein

the camera-control central device monitors whether the devices incorporated in the train have changed from a normal condition to an abnormal condition based on the monitoring-target condition information, and when the devices incorporated in the train have changed from the normal condition to the abnormal condition, generates the frame-rate control signal for each of the devices incorporated in the

train or for each of the cameras based on the monitoring-target condition information indicative of the change to the abnormal condition, and

the camera-control terminal device adjusts a frame rate of imaging data from the camera for each of the devices incorporated in the train or for each of the cameras based on the frame-rate control signal.

3. The in-train monitor system according to claim 1 or 2, wherein

the camera-control central device monitors whether the devices incorporated in the train have changed from a normal condition to an abnormal condition based on the monitoring-target condition information, and when the devices incorporated in the train have changed from the normal condition to the abnormal condition, generates an imaging-direction control signal for adjusting an imaging direction for each of the cameras based on the monitoring-target condition information indicative of the change to the abnormal condition, and

the camera-control terminal device sends the imaging-direction control signal to the camera.

4. The in-train monitor system according to claim 3, wherein

each of the cameras comprises:

a frame-rate adjusting unit that adjusts a frame rate of imaging data from the camera based on the frame-rate control signal; and

an imaging direction controller that adjusts an imaging direction based on the imaging-direction control signal.

5. An in-train monitor method for a train having an information management system that manages monitoring-target condition information output from various devices incorporated

in a train, cameras that are incorporated in respective train cars and take images of the devices incorporated in the train, and a transmission device that is connected to an in-train transmission channel of each train car and relays imaging data from the camera to each train car, the method being used for monitoring the devices incorporated in the train or for monitoring passengers and the method comprising:

a monitoring step of monitoring whether the devices incorporated in the train have changed from one condition to another condition based on the monitoring-target condition information sent from the information management system;

a signal generating step of generating, when it is determined that the devices incorporated in the train have changed from one condition to another condition, a frame-rate control signal for increasing a frame rate of imaging data from the camera based on the monitoring-target condition information indicative of the change to another condition; and

a frame rate adjusting step of adjusting a frame rate of imaging data from the camera based on the frame-rate control signal.

6. The in-train monitor method according to claim 5, wherein

the signal generating step includes a generating step of generating, when it is determined at the monitoring step that the device incorporated in the train have changed from a normal condition to an abnormal condition, the frame-rate control signal for each of the devices incorporated in the train or for each of the cameras based on the monitoring-target condition information indicative of the change to the abnormal condition, and

the frame rate adjusting step includes a step of adjusting a frame rate of imaging data from the camera for each of the devices incorporated in the train or for each of the cameras based on the frame-rate control signal generated

at the generating step.

7. The in-train monitor method according to claim 5, wherein

the signal generating step includes an imaging-direction control signal generating step of generating, when it is determined at the monitoring step that the devices incorporated in the train have changed from a normal condition to an abnormal condition an imaging-direction control signal for adjusting an imaging direction for each of the cameras based on the monitoring-target condition information indicative of the change to the abnormal condition, and

the frame rate adjusting step includes a step of sending the imaging-direction control signal generated at the imaging-direction control signal generating step to the camera.

8. The in-train monitor method according to claim 7, wherein

each of the cameras performs:

a frame rate adjusting step of adjusting a frame rate of imaging data from the camera based on the frame-rate control signal generated at the signal generating step; and

an imaging-direction control signal adjusting step of adjusting an imaging direction based on the imaging-direction control signal generated at the imaging-direction control signal generating step.