CLAIMS

1. A device state recording system comprising a ground system and an on-board system, the system recording a state quantity of a device in the on-board system in response to an instruction from the ground system, wherein

the on-board system includes a state recording device provided in the device, and

the state recording device includes

a device-side parameter setter configured to set at least a parameter related to generation of a trigger condition for instructing start of recording of a state quantity of the device, and a parameter related to the state quantity of the device, and

a state record storage configured to record therein the state quantity of the device based on the parameter related to generation of the trigger condition, an identification number for identifying the trigger condition, and the parameter related to the state quantity of the device, wherein

the ground system includes an analyzer configured to analyze the state quantity of the device recorded in the state record storage, based on the parameter related to generation of the trigger condition, the identification number for identifying the trigger condition, and the parameter related to a state type of the device.

2. The system of Claim 1, wherein

the ground system includes

a ground-side parameter setter configured to set at least a parameter related to generation of the trigger condition for instructing start of recording of the state quantity of the device, and a parameter related to the state quantity of the device, and

a first communication controller configured to control communication with the on-board system, including transmission of the parameter to the on-board system,

the on-board system includes

a second communication controller configured to control communication with the ground system, including reception of the parameter, and

an on-board parameter setter configured to set the parameter received under control of the second communication controller to the state recording device,

the state recording device further includes

a trigger condition generator configured to generate the trigger condition based on the parameter set by the device-side parameter setter, and

a state recording executor configured to control recording of the state quantity of the device in the state record storage, based on the trigger condition generated by the trigger condition generator, and

the device-side parameter setter sets the parameter related to the device, of the parameters set by the on-board parameter setter.

3. The system of Claim 2, wherein the state recording executor executes control to record the state quantity of the device in the state record storage, without affecting an operation of the on-board system.

4. The system of any one of Claims 1 to 3, wherein the on-board system includes a parameter initializer configured to initialize the parameter set by the device-side parameter setter to an initial value.

5. The system of any one of Claims 1 to 4, wherein the device-side parameter setter sets the parameters at a plurality of addresses in a memory space accessible by the device-side parameter setter,

and the state quantity of the device is memorized in a part of the addresses.

6. The system of Claim 5, wherein the device-side parameter setter sets a plurality of parameter groups having the trigger condition different from each other at a plurality of address groups in the memory space accessible by the device-side parameter setter, and sets an identification number that identifies each of the parameter groups as one of the parameters.

7. The system of Claim 6, wherein a state quantity corresponding to the identification number that identifies each of the parameter groups is memorized in a part of the addresses in the memory space.

8. The system of Claim 1, wherein a sampling cycle of the state quantity of the device is shorter than a data recording cycle of the analyzer.

9. A device state recording device comprising:

a communication controller configured to control communication with a ground system, including reception of a parameter;

a device-side parameter setter configured to a parameter related to generation of a trigger condition for instructing start of recording of a state quantity of a device, an identification number for identifying the trigger condition, and a parameter related to the state quantity of the device, based on information received under control of the communication controller; and

a state record storage configured to record therein the state quantity of the device based on the parameter related to generation

of the trigger condition and the parameter related to the state quantity of the device.