[0006]

A device management system according to one embodiment of the present disclosure includes: a device being a management target; and a device management apparatus configured to manage the device, the device including a device-side sending and receiving circuitunit configured to communicate with the device management apparatus, the device management apparatus including a storage deviceunit configured to store a first identifier unique to the device and a second identifier identifying the device in communication between the device and the device management apparatus; a sending and receiving circuitunit configured to receive, when the configuration of the device is changed, a third identifier allocated by being changed from the first identifier and the second identifier from the device-side sending and receiving circuitunit, a first identifier change detection unit configured to detect change of the first identifier when the third identifier received by the sending and receiving circuitunit is different from the first identifier stored in the storage deviceunit, and the second identifier received from the sending and receiving circuitunit matches the second identifier stored in the storage deviceunit, an identifier converting unit configured to, when the change of the first identifier is detected by the first identifier change detection unit, convert the third identifier received by the sending and receiving circuitunit to the first identifier, and output the converted first identifier and the second identifier, and a device management unit configured to manage the device that sent the third identifier and the second identifier as the device that includes the first identifier and the second identifier output from the identifier converting unit.

[0006a]

A device management system according to another embodiment of the present disclosure includes: a device being a management target; and a device management apparatus configured to manage the device, the device includes a first storage device configured to store a first identifier unique to the device and a second identifier identifying the device in communication between the device and the device management apparatus, a device-side sending and receiving circuit configured to receive, when the configuration of device is changed, receive the third identifier

allocated by being changed from the first identifier and the second identifier, a first identifier change detection unit configured to detect change of the first identifier when the third identifier received by the device-side sending and receiving circuit is different from the first identifier stored in the first storage device, and the second identifier received by the device-side sending and receiving circuit matches the second identifier stored in the first storage device, and an identifier converting unit configured to convert the third identifier received by the device-side sending and receiving circuit to the first identifier and output the converted first identifier and the second identifier when the first identifier change detection unit detects change of the first identifier, the device-side sending and receiving circuit is configured to send the first identifier and the second identifier output by the identifier converting unit to the device management apparatus, the device management apparatus includes a sending and receiving circuit configured to receive the first identifier and the second identifier sent from the device-side sending and receiving circuit, and a device management unit that manages a device that sent the third identifier and the second identifier as the device that includes the first identifier and the second identifier received by the sending and receiving circuit.

Advantageous Effects of Invention

[0007]

According to one embodiment of the present disclosure, the device management unit manages the device that sent a third identifier and a second identifier as a device that includes the first identifier and the second identifier output from the identifier converting unit. With this configuration, the device management system can conduct device management of a device consistently as a same device as before repair or replacement even when configuration of the device is changed and the first identifier is changed.

CLAIMS

[Claim 1]

A device management system comprising:

a device being a management target; and

a device management apparatus configured to manage the device,

the device including

a device-side sending and receiving circuit~~unit~~ configured to communicate with the device management apparatus,

the device management apparatus including

a storage device~~unit~~ configured to store a first identifier unique to the device and a second identifier identifying the device in communication between the device and the device management apparatus;

a sending and receiving circuit~~unit~~ configured to receive, when the configuration of the device is changed, a third identifier allocated by being changed from the first identifier and the second identifier from the device-side sending and receiving circuit~~unit~~,

a first identifier change detection unit configured to detect change of the first identifier when the third identifier received by the sending and receiving circuit~~unit~~ is different from the first identifier stored in the storage device~~unit~~, and the second identifier received from the sending and receiving circuit~~unit~~ matches the second identifier stored in the storage device~~unit~~,

an identifier converting unit configured to, when the change of the first identifier is detected by the first identifier change detection unit, convert the third identifier received by the sending and receiving ~~unit~~circuit to the first identifier, and output the converted first identifier and the second identifier, and

a device management unit configured to manage the device that sent the third identifier and the second identifier as the device that includes the first identifier and the second identifier output from the identifier converting unit.

[Claim 2]

The device management system of claim 1, wherein

the sending and receiving circuit~~unit~~ is configured to receive the first identifier and a fourth identifier from the device-side sending and receiving circuit~~unit~~, the fourth identifier being allocated by being changed from the second identifier that identifies the device in communication between the device and the device management apparatus,

the device management apparatus includes

a second identifier change detection unit is configured to, when the fourth identifier received by the sending and receiving circuit~~unit~~ is different from the second identifier stored in the storage device~~unit~~, and the first identifier received by the sending and receiving circuit~~unit~~ matches the first identifier stored in the storage device~~unit~~, detect the change of the second identifier,

the identifier converting unit is configured to,

when the second identifier change detection unit detects change of the second identifier, convert the fourth identifier received by the sending and receiving circuit~~unit~~ to the second identifier, and output the first identifier and the converted second identifier, and

the device management unit is configured to manage the device that sent the first identifier and the fourth identifier as the device including the first identifier and the second identifier output from the identifier converting unit.

[Claim 3]

A device management system comprising:

a device being a management target; and

a device management apparatus configured to manage the device, wherein

the device includes

a first storage device~~unit~~ configured to store a first identifier unique to the device and a second identifier identifying the device in communication between the device and the device management apparatus,

a device-side sending and receiving circuit~~unit~~ configured to receive, when the configuration of device is changed, receive the third identifier allocated by being changed from the first identifier and the second identifier,

a first identifier change detection unit configured to detect change of the first identifier when the third identifier received by the device-side sending and receiving circuit~~unit~~ is different from the first identifier stored in the first storage device~~unit~~, and the second identifier received by the device-side sending and receiving circuit~~unit~~ matches the second identifier stored in the first storage device~~unit~~, and

an identifier converting unit configured to convert the third identifier~~,~~ received by the device-side sending and receiving circuit~~unit~~ to the first identifier and output the converted first identifier and the second identifier when the first identifier change detection unit detects change of the first identifier,

wherein

the device-side sending and receiving circuit~~unit~~ is configured to send the first identifier and the second identifier output by the identifier converting unit to the device management apparatus,

the device management apparatus includes

a sending and receiving circuit~~unit~~ configured to receive the first identifier and the second identifier sent from the device-side sending and receiving circuit~~unit~~, and

a device management unit that manages a device that sent the third identifier and the second identifier as the device that includes the first identifier and the second identifier received by the sending and ~~the~~ receiving circuit~~unit~~.

[Claim 4]

The device management system of claim 3, wherein

the first storage device~~unit~~ is configured to store the third identifier and the second identifier, and includes a first information processing unit capable of rewriting the third identifier stored in the first storage device~~unit~~ to the first identifier,

the device-side sending and receiving circuit~~unit~~ is configured to send the first identifier rewritten by the first information processing unit and the second identifier stored in the first storage device~~unit~~ to the device management apparatus.

[Claim 5]

The device management system of ~~any one of~~ claim~~s~~ 1 ~~to 4~~, wherein

the device includes

a specific operation detection unit configured to detect specific operation against the device, and

a repair information creation unit configured to, when the specific operation detection unit detects specific operation, create repair information indicating that repair or replacement of the device is conducted,

wherein

the device-side sending and receiving circuit~~unit~~ is configured to send the repair information created by the repair information creation unit to the device management apparatus, and

the device management apparatus is configured to manage the repair information sent from the device-side sending and receiving circuit~~unit~~ by associating the repair information with the first identifier and the second identifier.

[Claim 6]

The device management system of ~~any one of~~ claim~~s~~ 1 ~~to 5~~, further comprising:

a second information processing unit including a display device~~unit~~,

wherein

the device management apparatus is configured to send the first identifier and the second identifier to the second information processing unit,

the second information processing unit is configured to receive the first identifier and the second identifier from the device management apparatus, and display the received first identifier and the second identifier on the display device~~unit~~.

[Claim 7]

The device management system of claim 6, wherein

the second information processing unit is configured to receive the repair information from the device management apparatus, and display the received repair information on the display device~~unit~~.

[Claim 8]

The device management system of claim 5, further comprising

a maintenance server connected to the device management apparatus and being configured to manage inventory data of a replacement part of the device, the device

management apparatus including a prediction circuitunit configured to predict life of the replacement part based on the repair information of the device, the maintenance server being configured to manage the inventory data of the replacement part of the device based on the life of the replacement part predicted by the prediction circuitunit,

wherein

the maintenance server is configured to manage inventory data of the replacement part based on the life of replacement part of the device predicted by the prediction circuitunit.