

device, each of which is new, is improved, and is capable of allowing coexistence of communication nodes in any implementation.

Solution to Problem

[0009]

According to a first aspect of the present invention, there is provided a communication control device including: circuitry configured to: transmit an acquisition request of connection information to a storage device, the storage device storing the connection information for connection to a plurality of communication control determination devices, the plurality of communication control determination devices controlling coexistence of a plurality of wireless systems; acquire a response including the connection information from the storage device, the connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices; and select a first communication control determination device from the list of two or more of the plurality of the communication control determination devices in the received connection information from the storage device, based on reference, wherein the reference relates to information necessary for communication control for the coexistence.

[0010]

According to a second aspect of the present invention, there is provided a storage device including: circuitry configured to: acquire connection information from a plurality of communication control determination devices each controlling coexistence of a plurality of wireless systems, the first connection information being used for connecting a communication control device to at least one of the plurality of communication control determination devices, the communication control determination device mediating information between the plurality of communication control determination devices and a communication device using the wireless systems; store the first connection information for connection to the communication control determination device; and generate second connection information based on geographical information of the communication control device and network information of the communication control device, the second connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.

[0011]

According to a third aspect of the present invention, there is provided a communication control determination device configured to control coexistence of a plurality of wireless systems, the communication control determination device including: circuitry configured to: record or update, in a server device that manages information of the plurality of wireless systems, first connection information for connecting a communication control device that mediates information to a communication device using the wireless system to the

communication control determination device; and provide the first connection information to a storage device in response to a request from the storage device, the storage device generating second connection information based on the first connection information, the second connection information including a list of two or more of a plurality of the communication control determination devices including the communication control determination device and the other the communication control determination device, as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.

[0012]

According to a fourth aspect of the present invention, there is provided a server device configured to manage information of a plurality of wireless systems, the server device including: circuitry configured to: acquire, from a plurality of communication control determination devices each controlling coexistence of the plurality of wireless systems, the first connection information for connecting a communication control device that mediates information to a communication device using the wireless system to at least one of the plurality of communication control determination devices; and provide the first connection information to a storage device in response to a request from the storage device, the storage device generating second connection information based on the first connection information, the second connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.

Advantageous Effects of Invention

[0013]

As described above, according to embodiments the present invention, it is possible to provide a communication control device, a storage device, a communication control determination device, and a server device, each of which is new, is improved, and is capable of allowing coexistence of communication nodes in any implementation.

[0014]

Note that the effects described above are not necessarily limitative. With or in the place of the above effects, there may be achieved any one of the effects described in this specification or other effects that may be grasped from this specification.

Brief Description of Drawings

[0015]

[FIG. 1] FIG. 1 is an explanatory view for describing an overview of a

CLAIMS

1. A communication control device comprising:

circuitry configured to:

transmit an acquisition request of connection information to a storage device, the storage device storing the connection information for connection to a plurality of communication control determination devices, the plurality of communication control determination devices controlling coexistence of a plurality of wireless systems;

acquire a response including the connection information from the storage device, the connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices; and

select a first communication control determination device from the list of two or more of the plurality of the communication control determination devices in the received connection information from the storage device, based on reference, wherein

the reference relates to information necessary for communication control for the coexistence.

2. The communication control device according to claim 1, wherein

the circuitry selects the first communication control determination device based on a condition, as the reference, the condition indicating that the communication control determination device possesses a coexistence profile same as a coexistence profile of the communication control device.

3. The communication control device according to claim 1, wherein

the circuitry selects the first communication control determination device based on a condition, as the reference, the condition indicating that the first communication control determination device provides a coexistence service desired by a communication node connected to the communication control device.

4. The communication control device according to claim 1, wherein

the circuitry transmits a connection permission request to the first communication control determination device, and acquires a response regarding connection permission from

the first communication control determination device.

5. A storage device comprising:
circuitry configured to:

acquire connection information from a plurality of communication control determination devices each controlling coexistence of a plurality of wireless systems, the first connection information being used for connecting a communication control device to at least one of the plurality of communication control determination devices, the communication control determination device mediating information between the plurality of communication control determination devices and a communication device using the wireless systems;

store the first connection information for connection to the communication control determination device; and

generate second connection information based on geographical information of the communication control device and network information of the communication control device, the second connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.

6. The storage device according to claim 5, wherein

when the circuitry receives an acquisition request of the second connection information from the communication control device, the circuitry transmits the generated second connection information to the communication control device.

7. The storage device according to claim 5, wherein

the network information includes information regarding a communication carrier who provides a communication service to the communication device connected to the communication control device.

8. The storage device according to claim 5, wherein

the network information includes information regarding a wireless communication scheme possessed by a communication node connected to the communication control device.

9. The storage device according to claim 5, wherein the network information includes a coexistence profile possessed by the communication control device.
10. The storage device according to claim 5, wherein the circuitry acquires the first connection information transmitted from the communication control determination device in response to an acquisition request of the first connection information transmitted to the communication control determination device.
11. The storage device according to claim 5, wherein the circuitry acquires the first connection information transmitted from a server device that manages information of the plurality of wireless systems in response to an acquisition request of the first connection information to the server device.
12. The storage device according to claim 5, wherein the second connection information includes at least an IP address of the communication control determination device.
13. The storage device according to claim 5, wherein the second connection information includes a coexistence profile possessed by the communication control determination device.
14. The storage device according to claim 5, wherein the second connection information includes information regarding a coexistence service providable by the communication control determination device.
15. A communication control determination device configured to control coexistence of a plurality of wireless systems, the communication control determination device comprising:
 - circuitry configured to:
 - record or update, in a server device that manages information of the plurality of wireless systems, first connection information for connecting a communication control device that mediates information to a communication device using the wireless system to the communication control determination device; and

provide the first connection information to a storage device in response to a request from the storage device, the storage device generating second connection information based on the first connection information, the second connection information including a list of two or more of a plurality of the communication control determination devices including the communication control determination device and the other the communication control determination device, as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.

16. The communication control determination device according to claim 15, wherein the circuitry provides not only first the connection information but also priority of connection to the storage device.
17. The communication control determination device according to claim 15, wherein the first connection information includes at least an IP address of the communication control determination device.
18. The communication control determination device according to claim 15, wherein the first connection information includes a coexistence profile possessed by the communication control determination device.
19. The communication control determination device according to claim 15, wherein the first connection information includes information regarding a coexistence service providable by the communication control determination device.
20. A server device configured to manage information of a plurality of wireless systems, the server device comprising:
circuitry configured to:
acquire, from a plurality of communication control determination devices each controlling coexistence of the plurality of wireless systems, the first connection information for connecting a communication control device that mediates information to a communication device using the wireless system to at least one of the plurality of communication control determination devices; and

provide the first connection information to a storage device in response to a request from the storage device, the storage device generating second connection information based on the first connection information, the second connection information including a list of two or more of the plurality of the communication control determination devices as candidate of initial connection between the communication control device and one of the plurality of communication control determination devices.