

[0009]

Embodiments of the present invention are developed to solve the above problems. According to a first aspect of the present invention, there is provided an information processing apparatus including: circuitry configured to set an identifier for identifying a network to which the information processing apparatus belongs to in the SIGNAL field of the IEEE 802.11 standard; select a Physical Layer Convergence Protocol (PLCP) header format from a plurality of PLCP header formats, wherein the PLCP header includes SIGNAL field of the IEEE 802.11 standard; transmit a packet including the PLCP header to another device which belongs to the network at a first transmission power; receive a PLCP header of a packet from the other device; determine whether a received packet is from the network or from another network based on the identifier; detect the rest of the packet when the packet is from the network; and set a detection threshold when the packet is from another network, based on the first transmission power.

[0010]

According to a second aspect of the present invention, there is provided an information processing method including: setting an identifier for identifying a network to which the information processing apparatus belongs to in the SIGNAL field of the IEEE 802.11 standard selecting a Physical Layer Convergence Protocol (PLCP) header format from a plurality of PLCP header formats, wherein the PLCP header includes SIGNAL field of the IEEE 802.11 standard; transmitting a packet including the PLCP header to another device which belongs to the network at a first transmission power; receiving a PLCP header of a packet from the other device; determining whether a received packet is from the network or from another network based on the identifier, detecting the rest of the packet when the packet is from the network; and setting a detection threshold when the packet is from another network, based on the first transmission power.

Advantageous Effects of Invention

[0011]

According to embodiments of the present invention, it is possible to obtain the good advantages in which wireless resources can be efficiently used. The advantages mentioned herein are not necessarily limited, but may be the advantages described in embodiments of the present invention.

[Brief Description of Drawings]

[0012]

[fig. 1] FIG. 1 is a diagram showing an example of a system configuration of a communication system 10 according to a first embodiment of the present technology.

[fig. 2] FIG. 2 is a diagram showing an example of a system configuration of the communication system 10 according to the first embodiment of the present technology.

[fig. 3] FIG. 3 is a diagram showing an example of a system configuration of the communication system 10 according to the first embodiment of the present technology.

[fig. 4] FIG. 4 is a diagram showing an example of transmission and reception process chronologically performed by information processing apparatuses included in the communication system 10 according to the first embodiment of the present technology.

[fig. 5] FIG. 5 is a block diagram showing an example of a functional configuration of an information processing apparatus 100 according to the first embodiment of the present technology.

[fig. 6] FIG. 6 is a sequence chart showing an example of a communication process between apparatuses included in the communication system 10 according to the first embodiment of the present technology.

[fig. 7] FIG. 7 is a diagram showing an example of the format of a PPDU exchanged between the apparatuses included in the communication system 10 according to the first embodiment of the present technology.

[fig. 8] FIG. 8 is a sequence chart showing an example of a connection process between the apparatuses included in the communication system 10 according to the first embodiment of the present technology.

Claims

1. An information processing apparatus comprising:
circuitry configured to
set an identifier for identifying a network to which the information processing apparatus belongs to in the SIGNAL field of the IEEE 802.11 standard;
select a Physical Layer Convergence Protocol (PLCP) header format from a plurality of PLCP header formats, wherein the PLCP header includes SIGNAL field of the IEEE 802.11 standard;
transmit a packet including the PLCP header to another device which belongs to the network at a first transmission power;
receive a PLCP header of a packet from the other device;
determine whether a received packet is from the network or from another network based on the identifier;
detect the rest of the packet when the packet is from the network; and
set a detection threshold when the packet is from another network, based on the first transmission power.
2. The electronic device of claim 1, wherein
the PLCP header format includes a PLCP preamble, and
the circuitry is configured to select one PLCP preamble sequence from a plurality of PLCP preamble sequences.
3. The electronic device of claim 2, wherein
the plurality of PLCP preamble sequences are generated by different rules.
4. The electronic device of claim 2, wherein
the plurality of PLCP preamble sequences include a first PLCP preamble sequence generated by a predetermined rule and a second PLCP preamble sequence generated by thinning at least part of content of the first PLCP preamble sequence or performing positive or negative inversion on at least a part of the first PLCP preamble sequence.

5. The electronic device of claim 1, wherein the circuitry is configured to:
select one piece of information from a set of pieces of information to be included in a field disposed after a PLCP preamble in the PLCP header format; and
include the selected information in the field for transmission of the packet.
6. The electronic device of claim 5, wherein
the circuitry is configured to include, in the field, an identifier for identifying a network to which the electronic device belongs.
7. The electronic device of claim 1, wherein the circuitry is configured to:
identify pieces of information for setting a packet detection condition for detecting the packet as the plurality of PLCP header formats;
select information for which the threshold for detecting the packet is the lowest from the pieces of information; and
control transmitting the packet including the selected information until a connection process with another electronic device that is a destination of the packet is completed.
8. The electronic device of claim 1, wherein
the circuitry is configured to select the PLCP header format from the plurality of PLCP header formats based on a capability of another electronic device that is a destination of the packet.
9. The electronic device of claim 1, wherein
the circuitry is configured to select the PLCP header format from the plurality of PLCP header formats based on a quality of communication with another electronic device that is a destination of the packet.
10. The electronic device of claim 1, wherein
the circuitry is configured to select the PLCP header format from the plurality of PLCP header formats based on report information transmitted from another electronic device.
11. The electronic device of claim 1, wherein
the circuitry is configured to select the PLCP header format from the plurality of

PLCP header formats based on notification information transmitted from another electronic device to the electronic device.

12. The electronic device of claim 1, wherein
at least one of the plurality of plurality of PLCP header formats has a format in conformity to an IEEE 802.11a standard, an IEEE 802.11b standard, an IEEE 802.11g standard, an IEEE 802.11n standard, or an IEEE 802.11ac standard.
13. The electronic device of claim 1, wherein
the circuitry is configured to select and apply modulation and channel coding by which another electronic device that is a destination of the packet is able to perform reception at a high probability based on the detection threshold value corresponding to the selected PLCP header.
14. The electronic device of claim 1, wherein
the circuitry is configured to determine a selection condition for selecting the PLCP header format from the plurality of PLCP header formats and a packet detection condition corresponding to each PLCP header based on a quality of communication with another electronic device.
15. The electronic device of claim 14, wherein
the circuitry is configured to control transmitting the selection condition and the packet detection condition to the other electronic device via wireless communication.
16. The electronic device of claim 14, wherein
the circuitry is configured to determine the selection condition based on a capability of the other electronic device and a capability of the electronic device.
17. The electronic device of claim 1, wherein
the circuitry is configured to determine a selection condition for selecting the PLCP header format from the plurality of PLCP header formats based on a quality of communication with another electronic device.

18. The electronic device of claim 15, wherein
the circuitry is configured to include the selection condition and the packet detection condition in report information and transmit the report information to the other information processing apparatus.
19. The electronic device of claim 15, wherein
the circuitry is configured to control transmitting the selection condition and the packet detection condition in separate transmission signals to the other electronic device.
20. An information processing method comprising:
setting an identifier for identifying a network to which the information processing apparatus belongs to in the SIGNAL field of the IEEE 802.11 standard
selecting a Physical Layer Convergence Protocol (PLCP) header format from a plurality of PLCP header formats, wherein the PLCP header includes SIGNAL field of the IEEE 802.11 standard;
transmitting a packet including the PLCP header to another device which belongs to the network at a first transmission power;
receiving a PLCP header of a packet from the other device;
determining whether a received packet is from the network or from another network based on the identifier,
detecting the rest of the packet when the packet is from the network; and
setting a detection threshold when the packet is from another network, based on the first transmission power.