[Solution to Problem]

[0006]

According to a first aspect of the present invention, there is provided an information processing apparatus including: a control part configured perform control to: receive a signal from another information processing apparatus; acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the received signal and a receiving power of the received signal, the surrounding environment information including at least the positions of the other information processing apparatus; and transmit an RTS frame as the frame for requesting transmission of data from the information processing apparatus to a first information processing apparatus, and ii)for requesting a second information processing apparatus to set a transmission inhibition time, wherein the RTS frame is transmitted with a first transmitting power determined on a basis of the surrounding environment information regarding the environment; and transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the receiving power at the time of receiving a CTS frame and transmitting power information stored in the CTS frame.

[0007]

In an embodiment of the first aspect of the present invention, the control part is configured to transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission

inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the destination surrounding environment information and the surrounding environment information.

[0008]

The control part may perform control to transmit the communication end frame using the transmitting power determined on the basis of transmitting power information transmitted from the first information processing apparatus and of the surrounding environment information. This provides an advantageous effect of determining the transmitting power for the communication end frame on the basis of the transmitting power information transmitted from the information processing apparatus as the destination and of the surrounding environment information.

[0009]

Disclosed herein is an information processing apparatus including: a control part configured to: receive a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the signal and a receiving power of the signal; transmit a frame for enabling a first information processing apparatus as a source of data to transmit the data and for requesting second information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the surrounding environment information regarding the environment surrounding the information processing apparatus transmitting the frame.

[0010]

The control part may perform control to transmit the frame in which information regarding the transmitting power is stored. This provides an advantageous effect of transmitting the frame having the transmitting power information stored therein.

[0011]

The control part may perform control to transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with the transmitting power determined on the basis of the surrounding environment information. This provides an advantageous effect of determining the transmitting power for the communication end frame on the basis of the surrounding environment information.

[0012]

Disclosed herein is an information processing apparatus including: a control part configured to: receive a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the signal and a receiving power of the signal; transmit a frame for requesting transmission data to a first information processing apparatus and for requesting second information processing apparatuses to set a transmission inhibition time; and transmit a frame for enabling the first information processing apparatus to transmit data and for requesting the second information processing apparatuses to set a transmission inhibition time, wherein the frames are

transmitted with transmitting power determined on a basis of the surrounding environment information regarding the environment surrounding the information processing apparatus.

[0013]

The control part may perform control to transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with the transmitting power determined on the basis of the surrounding environment information. This provides an advantageous effect of determining the power for transmitting the communication end frame on the basis of the surrounding environment information.

[0014]

The control part may, in the case of transmitting data, perform control to transmit the frame using the transmitting power determined on the basis of the surrounding environment information and on the basis of destination surrounding environment information regarding an environment surrounding a destination information processing apparatus as the destination of the data. This provides an advantageous effect of determining the transmitting power on the basis of the destination surrounding environment information and the surrounding environment information in the case of transmitting the data.

[0015]

The control part may perform control to transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with the transmitting power determined on

the basis of the destination surrounding environment information and the surrounding environment information. This provides an advantageous effect of determining the power for transmitting the communication end frame on the basis of the destination surrounding environment information and the surrounding environment information.

[0016]

Disclosed herein is a communication system including: a first information processing apparatus including a first control part configured to: receive a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire a first surrounding environment information regarding an environment surrounding the first information processing apparatus based on the signal and a receiving power of the signal; and transmit a frame for requesting transmission of data to a first one of the other information processing apparatuses and for requesting a second one of the other information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the first surrounding environment information regarding an environment surrounding the first information processing apparatus; and a second information processing apparatus including a second control part configured to: receive a signal from the other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire a second surrounding environment information regarding an environment surrounding the second information processing apparatus based on the signal and a receiving power of the signal; transmit a frame for enabling the first one of the

other information processing apparatuses as a source of the data to transmit the data and for requesting the second one of the other information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the second surrounding environment information regarding the environment surrounding the second information processing apparatus.

[0016a]

According to a second aspect of the present invention, there is provided an information processing method including: a control procedure for performing control to: receive a signal from another information processing apparatus; acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the received signal and a receiving power of the received signal, the surrounding environment information including at least the positions of the other information processing apparatus; and transmit an RTS frame as the frame for requesting transmission of data from the information processing apparatus to a first information processing apparatus, and for requesting a second information processing apparatus to set a transmission inhibition time, wherein the RTS frame is transmitted with a first transmitting power determined on a basis of the surrounding environment information; and transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the receiving power at the time of receiving a CTS frame and transmitting power information stored in the

CTS frame.

[00016b]

Disclosed herein is an information processing method including: a control procedure for: receiving a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquiring surrounding environment information regarding a surrounding environment based on the signal and a receiving power of the signal; and transmitting a frame for enabling a first information processing apparatus as a source of data to transmit the data and for requesting second information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the surrounding environment information.

[00016c]

Disclosed herein is an information processing method including: a control procedure for: receiving a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquiring surrounding environment information regarding a surrounding environment based on the signal and a receiving power of the signal; transmitting a frame for requesting transmission data to a first information processing apparatus and for requesting second information processing apparatuses to set a transmission inhibition time; and transmitting a frame for enabling the first information processing apparatus to transmit data and for requesting the second information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the surrounding environment

information.

[00016d]

According to a third aspect of the present invention, there is provided a program for causing a computer to execute the steps of the above information processing method when said program is carried out by a computer.

[00016e]

Disclosed herein is a program for causing a computer to execute a control procedure to: receive a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire surrounding environment information regarding a surrounding environment based on the signal and a receiving power of the signal; and transmit a frame for enabling a first information processing apparatus as a source of data to transmit the data and for requesting second information processing apparatuses to set a transmission inhibition time, wherein the frame is transmitted with transmitting power determined on a basis of the surrounding environment information.

[00016f]

Disclosed herein is a program for causing a computer to execute a control procedure for performing control to: receive a signal from other information processing apparatuses including a receiving power threshold and transmitting power of a frame; acquire surrounding environment information regarding a surrounding environment based on the signal and a receiving power of the signal; transmit a frame for requesting transmission data to a first information processing apparatus and for requesting second information processing apparatuses to set a transmission

inhibition time; and transmit a frame for enabling the first information processing apparatus to transmit data and for requesting the second information processing apparatuses to set a transmission inhibition time, wherein the frames are transmitted with transmitting power determined on a basis of the surrounding environment information.

[Advantageous Effects of Invention]

[0017]

Embodiments of the present invention provide the advantageous effect of improving the efficiency of utilization of communication resources by suitably setting the transmission inhibition time. There may be other advantageous effects derived from but not covered by this description.

[Brief Description of Drawings]

[0018]

[Fig. 1]

Fig. 1 is a schematic diagram depicting a typical configuration of a communication system 10 embodying the present technology.

[Fig. 2]

Fig. 2 is a schematic diagram depicting a typical

CLAIMS

1. An information processing apparatus comprising:

a control part configured perform control to:

- receive a signal from another information processing apparatus;
- acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the received signal and a receiving power of the received signal, the surrounding environment information including at least the positions of the other information processing apparatus; and
- transmit an RTS frame as the frame

(i) for requesting transmission of data from the information processing apparatus to a first information processing apparatus, and

(ii) for requesting a second information processing apparatus to set a transmission inhibition time, wherein the RTS frame is transmitted with a first transmitting power determined on a basis of the surrounding environment information regarding the environment; and

- transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the receiving power at the time of receiving a CTS frame and transmitting power information stored in the CTS frame.

2. The information processing apparatus according to claim 1, wherein the control part is configured to transmit a communication end frame for notifying the end of communication

of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the destination surrounding environment information and the surrounding environment information.

3. An information processing method comprising:

a control procedure for performing control to:

- receive a signal from another information processing apparatus;
- acquire surrounding environment information regarding an environment surrounding the information processing apparatus based on the received signal and a receiving power of the received signal, the surrounding environment information including at least the positions of the other information processing apparatus; and
- transmit an RTS frame as the frame
  - (i) for requesting transmission of data from the information processing apparatus to a first information processing apparatus, and
  - (ii) for requesting a second information processing apparatus to set a transmission inhibition time, wherein the RTS frame is transmitted with a first transmitting power determined on a basis of the surrounding environment information; and
- transmit a communication end frame for notifying the end of communication of the data and for requesting the transmission inhibition time to be canceled, the communication end frame being transmitted with a second transmitting power determined on a basis of the receiving power at the time of receiving a CTS frame and transmitting power information stored in the CTS frame.

4. A program for causing a computer to execute the steps of an information processing method according to claim 3 when said program is carried out by a computer.