[PTL 1]

Japanese Patent Laid-Open No. 2015-050674

[Summary]

[Technical Problem]

[0011]

However, according to the decision method of the technology of PTL 1, since it uses simple transmission continuation decision, there is the possibility that communication may be disabled under such a crowded environment that packet collision occurs frequently.

[0012]

The present disclosure has been made in view of such a situation as described above and particularly makes it possible to improve the mobility in a WLAN (Wireless LAN, WaveLAN) standardized by IEEE802.11 and implement stabilized communication irrespective a fluctuation of a communication environment.

[Solution to Problem]

[0013]

According to a first aspect of the present disclosure, there is provided a transmission apparatus including circuitry configured to implement a transmission section configured to transmit a data signal to a reception apparatus, a reception section configured to receive a response signal from the

reception apparatus by which the data signal is received simultaneously when the data signal is transmitted, and a control section configured to adjust a transmission parameter for controlling the transmission of the transmission section on the basis of the response signal. The transmission section is controlled with the transmission parameter adjusted by the control section to transmit a break flag followed by the data signal to the reception apparatus the transmission parameter comprises a modulation method.

[0014]

According to a second aspect of the present disclosure, there is provided a transmission method including a transmission process of transmitting a data signal to a reception apparatus, a reception process of receiving a response signal from the reception apparatus by which the data signal is received simultaneously when the data signal is transmitted, and a control process of adjusting a transmission parameter for controlling the transmission of the transmission process on the basis of the response signal. The transmission process is controlled with the transmission parameter adjusted by the control process to transmit a break flag followed by the data signal to the reception apparatus the transmission parameter comprises a modulation method.

[0015]

In the above aspects of the present disclosure, the data signal is transmitted to the reception apparatus, and the

response signal from the reception apparatus by which the data signal is received is received simultaneously when the data signal is transmitted. Then, the transmission parameter for controlling the transmission is adjusted on the basis of the response signal and, under the control with the adjusted transmission parameter, the data signal is transmitted to the reception apparatus.

[0016]

According to a third aspect of the present disclosure, there is provided a reception apparatus including circuitry configured to implement a reception section configured to receive a data signal transmitted from a transmission apparatus, and a transmission section configured to transmit a response signal to the reception of the data signal by the reception section simultaneously when the data signal is received. The reception section receives a break flag followed by the data signal whose transmission is controlled with a transmission parameter adjusted on the basis of the response signal by the transmission apparatus, and the transmission parameter comprises a modulation method.

[0017]

According to a fourth aspect of the present disclosure, there is provided a reception method including a reception process of receiving a data signal transmitted from a transmission apparatus, and a transmission process of transmitting a response signal to the reception of the data

signal by the reception process simultaneously when the data signal is received. The reception process receives a break flag followed by the data signal whose transmission is controlled with a transmission parameter adjusted on the basis of the response signal by the transmission apparatus, and the transmission parameter comprises a modulation method.

[0018]

In the above aspects of the present disclosure, the data signal transmitted from the transmission apparatus is received, and the response signal to the reception of the data signal is transmitted simultaneously when the data signal is received. The data signal whose transmission is controlled with the transmission parameter adjusted on the basis of the response signal by the transmission apparatus is received.

[0019]

According to a fifth aspect of the present disclosure, there is provided a communication system including a transmission apparatus and a reception apparatus. The transmission apparatus includes circuitry configured to implement a first transmission section configured to transmit a data signal to the reception apparatus, a first reception section configured to receive a response signal from the reception apparatus by which the data signal is received simultaneously when the data signal is transmitted, and a control section configured to adjust a transmission parameter for controlling the transmission of the first transmission

section on the basis of the response signal. The first transmission section is controlled with the transmission parameter adjusted by the control section to transmit a break flag followed by the data signal to the reception apparatus. The reception apparatus includes circuitry configured to implement a second reception section configured to receive the data signal transmitted from the transmission apparatus, and a second transmission section configured to transmit the response signal to the reception of the data signal by the second reception section simultaneously when the data signal is received. The second reception section receives a break flag followed by the data signal whose transmission is controlled with the transmission parameter adjusted on the basis of the response signal by the transmission apparatus, wherein the transmission parameter comprises a modulation method.

[0020]

In the above aspect of the present disclosure, the communication system includes the transmission apparatus and the reception apparatus. In the transmission apparatus, a data signal is transmitted to the reception apparatus, and a response signal from the reception apparatus by which the data signal is received is received simultaneously when the data signal is transmitted. Then, the transmission parameter for controlling the transmission is adjusted on the basis of the response signal, and the data signal is transmitted to the

reception apparatus under the control with the adjusted transmission parameter. Then, the transmitted data signal is received, and a response signal to the reception of the data signal is transmitted simultaneously when the data signal is received. Thus, the data signal whose transmission is controlled with the transmission parameter adjusted on the basis of the response signal by the transmission apparatus is received.

[Advantageous Effect of Invention]

[0021]

With the above aspects of the present disclosure, stabilized communication can be implemented irrespective of a fluctuation of a communication environment especially in a WLAN (Wireless LAN, WaveLAN).

[Brief Description of Drawings]

[0022]

[FIG. 1]

FIG. 1 is a view illustrating an overview of the present disclosure.

[FIG. 2]

FIG. 2 is a view illustrating an example of a configuration of a communication system of the present disclosure.

CLAIMS

1. A transmission apparatus comprising:

circuitry configured to implement

a transmission section configured to transmit a data signal to a reception apparatus;

a reception section configured to receive a response signal from the reception apparatus by which the data signal is received simultaneously when the data signal is transmitted; and

a control section configured to adjust a transmission parameter for controlling the transmission of the transmission section on a basis of the response signal, wherein

the transmission section is controlled with the transmission parameter adjusted by the control section to transmit a break flag followed by the data signal to the reception apparatus, and

the transmission parameter comprises a modulation method.

2. The transmission apparatus according to claim 1, wherein

the control section decides on the basis of the response signal whether or not it is necessary to adjust the transmission parameter and adjusts the transmission parameter for controlling the transmission of the transmission section.

3. The transmission apparatus according to claim 2, wherein

the control section decides on a basis of reception information included in the response signal whether or not it is necessary to adjust the transmission parameter.

4. The transmission apparatus according to claim 3, wherein

in a case where the response signal is a response signal destined for the transmission apparatus, the control section adjusts the transmission parameter on the basis of the reception information included in the response signal so as to improve a reception situation of the reception apparatus.

5. The transmission apparatus according to claim 3, wherein

in a case where the response signal is a response signal destined for a transmission apparatus of another network, the control section adjusts the transmission parameter on the basis of the reception information included in the response signal so as to suppress an influence by interference with the reception apparatus.

6. The transmission apparatus according to claim 2, wherein

the control section decides, on a basis of a notification included in the response signal and indicative of whether or not there is an interruption of a reception operation by the reception apparatus, whether or not it is necessary to adjust the transmission parameter and adjusts the transmission parameter for controlling the transmission of the transmission section.

7. The transmission apparatus according to claim 1, wherein

when the transmission section is controlled with the transmission parameter adjusted by the control section to transmit the data signal to the reception apparatus, the transmission section re-transmits the data signal beginning with a top of the data signal.

8. The transmission apparatus according to claim 7, wherein

in the case where the transmission section is controlled with the transmission parameter adjusted by the control section to transmit the data signal to the reception apparatus, the transmission section first interrupts transmission of the data signal being transmitted to the reception apparatus and then re-transmits the data signal beginning with the top of the data signal.

9. The transmission apparatus according to claim 8, wherein

in the case where the transmission section interrupts the transmission of the data signal being transmitted to the reception apparatus, the transmission section notifies the reception apparatus in advance that the transmission of the data signal being transmitted is to be interrupted.

10. A transmission method comprising:

a transmission process of transmitting a data signal to a reception apparatus;

a reception process of receiving a response signal from the reception apparatus by which the data signal is received simultaneously when the data signal is transmitted; and

a control process of adjusting a transmission parameter for controlling the transmission of the transmission process on a basis of the response signal, wherein

the transmission process is controlled with the transmission parameter adjusted by the control process to transmit a break flag followed by the data signal to the reception apparatus, and

the transmission parameter comprises a modulation method.

11. A reception apparatus comprising:

circuitry configured to implement

a reception section configured to receive a data signal transmitted from a transmission apparatus; and

a transmission section configured to transmit a response signal to the reception of the data signal by the reception section simultaneously when the data signal is received, wherein

the reception section receives a break flag followed by the data signal whose transmission is controlled with a transmission parameter adjusted on a basis of the response signal by the transmission apparatus, and

the transmission parameter comprises a modulation method.

12. The reception apparatus according to claim 11, wherein

the transmission section places, into the response signal to the reception of the data signal by the reception section, reception information when the data signal is received by the reception section and transmits the resulting response signal simultaneously when the data signal is received, and

the reception section receives, from the transmission apparatus, the data signal whose transmission is controlled with a transmission parameter adjusted on a basis of the reception information included in the response signal.

13. The reception apparatus according to claim 12, wherein the transmission section transmits the response signal including information relating to any one of reception quality or interference power as the reception information.

14. The reception apparatus according to claim 11, wherein the reception section causes a reception operation of the data signal to be interrupted and causes a top portion of the data signal that is transmitted newly to be searched for.

15. The reception apparatus according to claim 14, wherein the reception section causes the reception operation of the data signal to be interrupted and causes the top portion of the data signal that is transmitted newly to be searched for on a basis of a notification of interruption of a transmission operation of the data signal from the transmission apparatus.

16. The reception apparatus according to claim 14, wherein the reception section causes the reception operation of the data signal to be interrupted and causes the top portion of the data signal that is transmitted newly to be searched for on a basis of a reception situation of the data signal.

17. The reception apparatus according to claim 16, wherein the transmission section transmits a response signal

that includes, as reception information, information indicative of whether or not there is an interruption of the reception operation of the data signal to the transmission apparatus.

18. The reception apparatus according to claim 11, wherein

the transmission section transmits the response signal to the reception of the data signal by the reception section simultaneously when the data signal is received and transmits the response signal periodically.

19. A reception method comprising:

a reception process of receiving a data signal transmitted from a transmission apparatus; and

a transmission process of transmitting a response signal to the reception of the data signal by the reception process simultaneously when the data signal is received, wherein

the reception process receives a break flag followed by the data signal whose transmission is controlled with a transmission parameter adjusted on a basis of the response signal by the transmission apparatus, and

the transmission parameter comprises a modulation method.

20. A communication system comprising:

a transmission apparatus; and

a reception apparatus, wherein

the transmission apparatus includes circuitry configured to implement

a first transmission section configured to transmit a data signal to the reception apparatus,

a first reception section configured to receive a response signal from the reception apparatus by which the data signal is received simultaneously when the data signal is transmitted, and

a control section configured to adjust a transmission parameter for controlling the transmission of the first transmission section on a basis of the response signal,

the first transmission section being controlled with the transmission parameter adjusted by the control section to transmit a break flag followed by the data signal to the reception apparatus, and

the reception apparatus includes circuitry configured to implement

a second reception section configured to receive the data signal transmitted from the transmission apparatus, and

a second transmission section configured to transmit the response signal to the reception of the data

signal by the second reception section simultaneously when the data signal is received,

the second reception section receiving the break flag followed by the data signal whose transmission is controlled with the transmission parameter adjusted on the basis of the response signal by the transmission apparatus, wherein the transmission parameter comprises a modulation method.