CLAIMS

1. A first radio receiving apparatus included in a plurality of radio receiving apparatuses that perform communication with a radio transmission apparatus using OFDMA transmission, comprising:

a reception unit that receives a resource reserving signal using at least one radio resource from which the radio transmission apparatus transmits the resource reserving signal, and

a transmission unit that transmits a resource reserving response signal to the radio transmission apparatus by using at least one radio resource with which the resource reserving signal is received, wherein

the resource reserving signal includes a receiver address (RA) field in which a broadcast address is described;

the resource reserving signal further includes information indicating a combination of the plurality of radio receiving apparatuses in PHY header;

the combination of the plurality of radio receiving apparatuses explicitly indicates destination receiving apparatuses of the resource reserving signal;

the radio resource with which the resource reserving signal is received is divided into a plurality of sub-channels, and information indicating a sub-channel with

which the resource reserving response signal is transmitted among the plurality of sub-channels is signaled from the radio transmission apparatus;

the resource reserving signal includes information indicating a bandwidth of the radio resource with which the radio transmission apparatus transmits the resource reserving signal;

a bandwidth of the sub-channel is a bandwidth obtained by equally dividing the bandwidth of the radio resource with which the resource reserving signal is transmitted;

a sub-channel with which the resource reserving response signal is transmitted among the plurality of sub-channels is allocated by the radio transmission apparatus; and

the sub-channel to which the resource reserving response signal is transmitted is set for each of the radio receiving apparatuses indicated by the combination of the plurality of radio receiving apparatuses included in the resource reserving signal.

2. The first radio receiving apparatus according to claim 1, wherein

the reception unit receives, from the radio transmission apparatus, an OFDMA signal including a data signal to the first radio receiving apparatus after the

transmission unit transmits the resource reserving response signal.

3. The first radio receiving apparatus according to claim 1, wherein

a time period during which the transmission unit waits until the resource reserving response signal is transmitted after receiving the resource reserving signal is equal to a time period during which the another of the radio receiving apparatuses waits until the resource reserving response signal is transmitted after receiving the resource reserving signal.

4. The radio receiving apparatus according to claim 1, wherein

the transmission unit transmits the resource reserving response signal at the same time as a time at which at least one of the plurality of radio receiving apparatuses transmits the resource reserving response signal.

5. A radio transmission apparatus that performs communication with a plurality of radio receiving apparatuses using OFDMA transmission, comprising:

a transmission unit that transmits a resource reserving signal, and

a reception unit that receives a resource reserving response signal transmitted by at least one radio receiving apparatus among the plurality of radio receiving apparatuses by using at least one radio resource with which the resource reserving signal is received, wherein

the resource reserving includes a receiver address (RA) field in which a broadcast address is described;

the resource reserving signal further includes information indicating a combination of the plurality of radio receiving apparatuses in PHY header;

the combination of the plurality of radio receiving apparatuses explicitly indicates destination receiving apparatuses of the resource reserving signal;

the radio resource with which the resource reserving signal is transmitted by the transmission unit is divided into a plurality of sub-channels, and information indicating a sub-channel with which the resource reserving response signal is transmitted by the radio receiving apparatus among the plurality of sub-channels is signaled to the radio receiving apparatus;

the resource reserving signal includes information indicating a bandwidth of the radio resource with which the transmission unit transmits the resource reserving signal;

a bandwidth of the sub-channel is a bandwidth obtained by equally dividing the bandwidth of the radio resource with

which the resource reserving signal is transmitted;

a sub-channel with which the resource reserving response signal is transmitted among the plurality of sub-channels is allocated by the radio transmission apparatus; and

the sub-channel to which the resource reserving response signal is transmitted is set for each of the radio receiving apparatuses indicated by the combination of the plurality of radio receiving apparatuses included in the resource reserving signal.

6. The radio transmission apparatus according to claim 5, wherein

the reception unit continues a reception operation for a predetermined time period after transmitting the resource reserving signal, and

the reception unit stops the reception operation in a case where no resource reserving response signal transmitted by the plurality of radio receiving apparatuses is received for the predetermined time period.

7. The radio transmission apparatus according to claim 5, wherein

the transmission unit transmits an OFDMA signal including a data signal to the plurality of radio receiving

apparatuses after the reception unit receives the resource reserving response signal.

8. A communication method for a first radio receiving apparatus included in a plurality of radio receiving apparatuses that perform communication with a radio transmission apparatus using OFDMA transmission, the communication method comprising the steps of:

receiving a resource reserving signal using at least one radio resource from which the radio transmission apparatus has transmitted the resource reserving signal, and

transmitting a first resource reserving response signal to the radio transmission apparatus by using at least one radio resource with which the resource reserving signal is received, wherein

the resource reserving signal includes a receiver address (RA) field in which a broadcast address is described;

the resource reserving signal further includes information indicating a combination of the plurality of radio receiving apparatuses in PHY header;

the combination of the plurality of radio receiving apparatuses explicitly indicates destination receiving apparatuses of the resource reserving signal;

the radio resource with which the resource reserving signal is received is divided into a plurality of sub-

channels, and information indicating a sub-channel with which the first resource reserving response signal is transmitted among the plurality of sub-channels is signaled from the radio transmission apparatus;

the resource reserving signal includes information indicating a bandwidth of the radio resource with which the radio transmission apparatus transmits the resource reserving signal;

a bandwidth of the sub-channel is a bandwidth obtained by equally dividing the bandwidth of the radio resource with which the resource reserving signal is transmitted;

a sub-channel with which the resource reserving response signal is transmitted among the plurality of sub-channels is allocated by the radio transmission apparatus; and

the sub-channel to which the resource reserving response signal is transmitted is set for each of the radio receiving apparatuses indicated by the combination of the plurality of radio receiving apparatuses included in the resource reserving signal.