

CLAIMS

What is claimed is:

1. A data transmission method, comprising:

generating a signaling field of a physical layer protocol data unit PPDU, wherein a channel

5 bandwidth for transmitting the PPDU comprises at least two frequency domain segments, and the at least two frequency domain segments comprise a first frequency domain segment, wherein

the signaling field is transmitted on the first frequency domain segment, and comprises a common field and a user specific field, the common field comprises a resource unit allocation subfield, and the user specific field comprises a user field;

10 the resource unit allocation subfield indicates a resource unit RU comprised in the channel bandwidth for transmitting the PPDU, and indicates a quantity of user fields corresponding to an RU that is in the RU and that is allocated to a station parking on the first frequency domain segment; and

the quantity of user fields corresponding to the RU allocated to the station parking on the first
15 frequency domain segment represents a quantity of user fields that are contributed by the RU to one content channel in the user specific field, and the user field is a user field corresponding to the station parking on the first frequency domain segment; and

sending the signaling field on the first frequency domain segment.

2. The method according to claim 1, wherein the resource unit allocation subfield indicates
20 that a quantity of user fields corresponding to an RU that is in the resource unit RU comprised in the channel bandwidth for transmitting the PPDU and that is not allocated to the station parking on the first frequency domain segment is 0, and the RU not allocated to the station parking on the first frequency domain segment is an RU greater than or equal to a 242-tone RU.

3. The method according to claim 1, wherein a quantity, indicated by the resource unit
25 allocation subfield, of user fields corresponding to an RU not allocated to the station parking on the first frequency domain segment is less than a quantity of user fields actually corresponding to the RU not allocated to the station parking on the first frequency domain segment.

4. The method according to claim 3, wherein the RU that is indicated by the resource unit
allocation subfield and that is not allocated to the station parking on the first frequency domain
30 segment is actually at least two RUs not allocated to the station parking on the first frequency

domain segment.

5. The method according to claim 4, wherein the at least two RUs are RUs less than a 242-tone RU.

6. A data transmission method, comprising:

5 receiving, by a station parking on a first frequency domain segment, a signaling field of a physical layer protocol data unit PPDU on the first frequency domain segment, wherein a channel bandwidth for transmitting the PPDU comprises at least two frequency domain segments, and the at least two frequency domain segments comprise the first frequency domain segment, wherein
the signaling field comprises a common field and a user specific field, the common field
10 comprises a resource unit allocation subfield, and the user specific field comprises a user field;
the resource unit allocation subfield indicates a resource unit RU in the channel bandwidth for transmitting the PPDU, and indicates a quantity of user fields corresponding to an RU that is in the RU and that is allocated to the station parking on the first frequency domain segment; and
the quantity of user fields corresponding to the RU allocated to the station parking on the first
15 frequency domain segment represents a quantity of user fields that are contributed by the RU to one content channel in the user specific field, and the user field is a user field corresponding to the station parking on the first frequency domain segment; and
obtaining, by the station from the user field comprised in the user specific field in the received signaling field, a user field that carries an identifier of the station, and obtaining data transmitted
20 on an RU corresponding to the user field.

7. The method according to claim 6, wherein the resource unit allocation subfield indicates that a quantity of user fields corresponding to an RU that is in the resource unit RU comprised in the channel bandwidth for transmitting the PPDU and that is not allocated to the station parking on the first frequency domain segment is 0, and the RU not allocated to the station parking on the
25 first frequency domain segment is an RU greater than or equal to a 242-tone RU.

8. The method according to claim 6, wherein a quantity, indicated by the resource unit allocation subfield, of user fields corresponding to an RU not allocated to the station parking on the first frequency domain segment is less than a quantity of user fields actually corresponding to the RU not allocated to the station parking on the first frequency domain segment.

30 9. The method according to claim 8, wherein the RU that is indicated by the resource unit allocation subfield and that is not allocated to the station parking on the first frequency domain

segment is actually at least two RUs not allocated to the station parking on the first frequency domain segment.

10. The method according to claim 9, wherein the at least two RUs are RUs less than a 242-tone RU.

5 11. A data transmission method, comprising:

generating a signaling field of a physical layer protocol data unit PPDU, wherein a channel bandwidth for transmitting the PPDU comprises at least two frequency domain segments, and the at least two frequency domain segments comprise a first frequency domain segment; and

sending the signaling field on the first frequency domain segment, wherein

10 the signaling field comprises a common field and a user specific field, the common field comprises a resource unit allocation subfield, and the user specific field comprises a user field;

the resource unit allocation subfield indicates a resource unit RU in the channel bandwidth for transmitting the PPDU;

15 an RU indicated by at least one resource unit allocation subfield comprised in the common field is a plurality of RUs less than a 242-tone RU; and

each RU in the plurality of RUs less than the 242-tone RU corresponds to at least one user field, a user field corresponding to at least one first RU carries an identifier of a station parking on the first frequency domain segment, a user field corresponding to at least one second RU does not carry the identifier of the station parking on the first frequency domain segment, and at least a part
20 of subcarriers corresponding to the second RU indicated by the resource unit allocation subfield belong to at least two RUs.

12. A data transmission method, comprising:

receiving, by a station parking on a first frequency domain segment, a signaling field of a physical layer protocol data unit PPDU on the first frequency domain segment, wherein a channel
25 bandwidth for transmitting the PPDU comprises at least two frequency domain segments, and the at least two frequency domain segments comprise the first frequency domain segment, wherein

the signaling field comprises a common field and a user specific field, the common field comprises a resource unit allocation subfield, and the user specific field comprises a user field;

30 the resource unit allocation subfield indicates a resource unit RU in the channel bandwidth for transmitting the PPDU;

an RU indicated by at least one resource unit allocation subfield comprised in the common

field is a plurality of RUs less than a 242-tone RU; and

each RU in the plurality of RUs less than the 242-tone RU corresponds to at least one user field, a user field corresponding to at least one first RU carries an identifier of the station parking on the first frequency domain segment, a user field corresponding to at least one second RU does not carry the identifier of the station parking on the first frequency domain segment, and at least a part of subcarriers corresponding to the second RU indicated by the resource unit allocation subfield belong to at least two RUs; and

obtaining, by the station from the user field comprised in the user specific field, a user field that carries the identifier of the station, and obtaining data transmitted on an RU corresponding to the user field.

13. A communication apparatus, comprising a processor and a transceiver, wherein when the processor executes a computer program or instructions in a memory, the method according to any one of claims 1 to 5 is performed, or the method according to any one of claims 6 to 10 is performed, or the method according to claim 11 is performed, or the method according to claim 12 is performed.

14. A communication apparatus, comprising a processor, wherein the processor is coupled to a memory, and is configured to: read instructions in the memory, and implement, based on the instructions, the method according to any one of claims 1 to 5, the method according to any one of claims 6 to 10, the method according to claim 11, or the method according to claim 12.

15. A computer-readable storage medium, wherein the computer-readable storage medium stores computer instructions, and the computer instruction instructs a communication apparatus to perform the method according to any one of claims 1 to 5, or the computer instruction instructs a communication apparatus to perform the method according to any one of claims 6 to 10, or the computer instruction instructs a communication apparatus to perform the method according to claim 11, or the computer instruction instructs a communication apparatus to perform the method according to claim 12.

16. A computer program product, wherein when the computer program product is executed on a computer, the method according to any one of claims 1 to 5, the method according to any one of claims 6 to 10, the method according to claim 11, or the method according to claim 12 is implemented.