SUMMARY

[6] A non-limiting example facilitates providing communication apparatuses and communication methods for MU-MIMO transmissions in context of EHT WLAN.

[7] In one aspect, there is provided a communication apparatus comprising: circuitry, which, in operation, generates a physical layer protocol data unit (PPDU) comprising a signal field that indicates resource unit (RU) assignment information for a plurality of other communication apparatuses; and a transmitter, which, in operation, transmits the PPDU to the plurality of other communication apparatuses in two or more 80 MHz frequency subblocks; wherein when one of the plurality of other communication apparatuses parks in one of the two or more 80 MHz frequency subblocks, RU assignment information corresponding to the one of the plurality of other communication apparatuses is indicated in a part of the signal field transmitted in the one of the two or more 80 MHz frequency subblocks, wherein only two or more of the plurality of other communication apparatuses parking in a same 80 MHz frequency subblock of the two or more 80 MHz frequency subblocks are assigned with a RU for a multi-user multiple input multiple output, MU-MIMO, transmission.

[8] In another example, there is provided a communication apparatus comprising: a receiver, which, in operation, receives a physical layer protocol data unit (PPDU) comprising a signal field that indicates resource unit (RU) assignment information for the communication apparatus transmitted in two or more 80 MHz frequency segments; and circuitry, which, in operation, processes the PPDU, wherein when the communication apparatus parks in one of the two or more 80 MHz frequency segments, RU assignment information corresponding to the communication apparatuses is indicated in the signal field transmitted in the one of the two or more 80 MHz frequency segments

[9] In another aspect, there is provided a communication method comprising: generating a physical layer protocol data unit (PPDU) comprising a signal field that indicates resource unit (RU) assignment information for a plurality of other communication apparatuses; and transmitting the PPDU to the plurality of other communication apparatuses in two or more 80 MHz frequency subblocks; wherein when one of the plurality of other communication

apparatuses parks in one of the two or more 80 MHz frequency subblocks, RU assignment information corresponding to the one of the plurality of

other communication apparatuses is indicated in a part of the signal field transmitted in the one of the two or more 80 MHz frequency subblocks, wherein only two or more of the plurality of other communication apparatuses parking in a same 80 MHz frequency subblock of the two or more 80 MHz frequency subblocks are assigned with a RU for a multi-user multiple input multiple output, MU-MIMO, transmission.

[10] It should be noted that general or specific examples may be implemented as a system, a method, an integrated circuit, a computer program, a storage medium, or any selective combination thereof.

[11] Additional benefits and advantages of the examples in the disclosure will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various examples and features of the specification and drawings, which need not all be provided in order to obtain one or more of such benefits and/or advantages.

BRIEF DESCRIPTION OF THE DRAWINGS

[12] Embodiments of the disclosure will be better understood and readily apparent to one of ordinary skilled in the art from the following written description, by way of example only, and in conjunction with the drawings, in which:

[13] Fig. 1A depicts a schematic diagram of uplink and downlink single-user (SU) multiple input multiple output (MIMO) communication between an access point (AP) and a station (STA) in a MIMO wireless network.

[14] Fig. 1B depicts a schematic diagram of downlink multi-user (MU) communication between an AP and multiple STAs in a MIMO wireless network.

[15] Fig. 1C depicts a schematic diagram of trigger-based uplink MU communication between an AP and multiple STAs in a MIMO wireless network.

[16] Fig. 1D depicts a schematic diagram of trigger-based downlink multi-AP communication between multiple APs and a STA in a MIMO wireless network.

[17] Fig. 1E depicts a format of a PPDU (physical layer protocol data unit (used for downlink multi-user (MU) communications between an AP and multiple STAs in an HE WLAN.

[18] Fig. 1F depicts the HE-SIG-B (HE Signal B) field in more detail.

CLAIMS

1. A communication apparatus comprising:

circuitry, which, in operation, generates a physical layer protocol data unit (PPDU) comprising a signal field that indicates resource unit (RU) assignment information for a plurality of other communication apparatuses; and

a transmitter, which, in operation, transmits the PPDU to the plurality of other communication apparatuses in two or more 80 MHz frequency subblocks;

wherein when one of the plurality of other communication apparatuses parks in one of the two or more 80 MHz frequency subblocks, RU assignment information corresponding to the one of the plurality of other communication apparatuses is indicated in a part of the signal field transmitted in the one of the two or more 80 MHz frequency subblocks,

wherein only two or more of the plurality of other communication apparatuses parking in a same 80 MHz frequency subblock of the two or more 80 MHz frequency subblocks are assigned with a RU for a multi-user multiple input multiple output, MU-MIMO, transmission.

2. The communication apparatus of claim 1, wherein the RU assignment information for the one of the plurality of other communication apparatuses indicates a RU that is located within the one of the two or more 80 MHz frequency subblock.

3. The communication apparatus of claim 1, wherein the RU assignment information for the one of the plurality of other communication apparatuses indicates a RU that is located outside the one of the two or more 80 MHz frequency subblocks.

4. A communication method comprising:

generating a physical layer protocol data unit (PPDU) comprising a signal field that indicates resource unit (RU) assignment information for a plurality of other communication apparatuses; and

transmitting the PPDU to the plurality of other communication apparatuses in two or more 80 MHz frequency subblocks;

wherein when one of the plurality of other communication apparatuses parks in one of the two or more 80 MHz frequency subblocks, RU assignment information corresponding to the one of the plurality of other communication apparatuses is indicated in a part of the signal field transmitted in the one of the two or more 80 MHz frequency subblocks

wherein only two or more of the plurality of other communication apparatuses parking in a same 80 MHz frequency subblock of the two or more 80 MHz frequency subblocks are assigned with a RU for a multi-user multiple input multiple output, MU-MIMO, transmission.

5. The communication apparatus of claim 1, wherein the RU assignment information is indicated in a RU allocation subfield of the signal field.