

[7] According to an example, the present disclosure refers to a communication apparatus comprising: circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and a transmitter, which in operation, transmits the generated trigger frame; wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure, which determines whether a RU or RU combination allocated to another communication apparatus is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination, is disabled for the another communication apparatus addressed by the each of the plurality of user info fields and a second field which indicates the allocated RU or RU combination.

[8] According to an example, the present disclosure refers to a communication method comprising: generating a trigger frame comprising a common info field and a plurality of user info fields; and transmitting the generated trigger frame; wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure, which determines whether a RU or RU combination allocated to another communication apparatus is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination, is disabled for the communication apparatus addressed by the each of the plurality of user info fields and a second field which indicates the allocated RU or RU combination.

[8a] According to an example, the present disclosure refers to a communication apparatus comprising: a receiver, which in operation, receives a trigger frame comprising a first field and a second field; and circuitry, which in operation, generates a trigger-based (TB) physical layer protocol data unit (PPDU) based on the trigger frame, wherein the second field indicates an allocated RU or RU combination which is allocated to the communication apparatus, and the circuitry determines whether or not to perform a resource unit (RU) adaptation procedure based on indication in the first field, wherein the RU adaptation procedure determines whether the allocated RU or RU combination is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination.

[8b] According to an example, the present disclosure refers to a communication method comprising: receiving a trigger frame comprising a first field and a second field; and generating a trigger-based (TB) physical layer protocol data unit (PPDU) based on the trigger frame, wherein the second field indicates an allocated RU or RU combination which is allocated to the communication apparatus, and the circuitry determines whether or not to perform a resource unit (RU) adaptation procedure based on indication in the first field, wherein the RU adaptation procedure determines whether the allocated RU or RU combination is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination.

[8c] According to an example, the present disclosure refers to an integrated circuit comprising: at least one input, which, in operation, inputs an electronic signal; and control circuitry coupled to the at least one input, which, in operation, controls: generating a trigger frame comprising a common info field and a plurality of user info fields; and transmitting the generated trigger frame; wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure, which determines whether a RU or RU combination allocated to another communication apparatus is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination, is disabled for the communication apparatus addressed by the each of the plurality of user info fields and a second field which indicates the allocated RU or RU combination.

[8d] According to an example, the present disclosure refers to an integrated circuit comprising: at least one input, which, in operation, inputs an electronic signal; and control circuitry coupled to the at least one input, which, in operation, controls: receiving a trigger frame comprising a first field and a second field; and
5 generating a trigger-based (TB) physical layer protocol data unit (PPDU) based on the trigger frame, wherein the second field indicates an allocated RU or RU combination which is allocated to the communication apparatus, and the circuitry determines whether or not to perform a resource unit (RU) adaptation procedure based on indication in the first field, wherein the RU adaptation procedure
10 determines whether the allocated RU or RU combination is adapted to one of two or more RUs or RU combinations associated with the allocated RU or RU combination.

[8e] According to an aspect, the present disclosure refers to a communication
15 apparatus comprising:

circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and

a transmitter, which in operation, transmits the generated trigger frame;

wherein each of the plurality of user info fields comprises a first field which
20 indicates whether a resource unit (RU) adaptation procedure is disabled for another communication apparatus addressed by the each of the plurality of user info field and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and

wherein when the RU adaptation procedure is performed by the another
25 communication apparatus and part of the allocated RU or RU combination which is considered to be idle matches one of two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is adapted to the one of the two or more RUs or RU combinations associated with the allocated RU or RU combination.

[8f] According to an aspect, the present disclosure refers to a communication
30 apparatus comprising:

circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and

35 a transmitter, which in operation, transmits the generated trigger frame;

wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure is disabled for

another communication apparatus addressed by the each of the plurality of user info field and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and

5 wherein when the RU adaptation procedure is performed by the another communication apparatus and part of the allocated RU or RU combination which is considered to be idle does not match any of two or more RUs or RU combinations associated with the allocated RU or RU combination but covers at least one of the two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is adapted to the at
10 least one of the two or more RUs or RU combinations associated with the allocated RU or RU combination which overlaps with the part of the allocated RU or RU combination to the most extent.

[8g] According to an aspect, the present disclosure refers to a communication
15 apparatus comprising:

circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and

a transmitter, which in operation, transmits the generated trigger frame;

20 wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure is disabled for another communication apparatus addressed by the each of the plurality of user info field and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and

25 wherein when the RU adaptation procedure is performed by the another communication apparatus and part of the allocated RU or RU combination which is considered to be idle does not match or cover any of two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is not adapted to any of the two or more RUs or RU combinations associated with the allocated RU or RU combination.

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[8h] According to an aspect, the present disclosure refers to a communication method comprising:

generating a trigger frame comprising a common info field and a plurality of user info fields; and

35 transmitting the generated trigger frame;

wherein each of the plurality of user info fields comprises a first field which indicates whether a RU adaptation procedure is disabled for a communication

apparatus addressed by the each of the plurality of user info field and a second field which indicates a RU or RU combination allocated to the communication apparatus, and

5 wherein when the RU adaptation procedure is performed by another communication apparatus and part of the allocated RU or RU combination which is considered to be idle matches one of two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is adapted to the one of the two or more RUs or RU combinations associated with the allocated RU or RU combination.

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

15 [10] Additional benefits and advantages of the disclosed embodiments will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various embodiments 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.

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BRIEF DESCRIPTION OF THE DRAWINGS

CLAIMS

1. A communication apparatus comprising:
 - 5 circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and
 - a transmitter, which in operation, transmits the generated trigger frame;
 - wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure is disabled for another
 - 10 communication apparatus addressed by the each of the plurality of user info field and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and
 - wherein when the RU adaptation procedure is performed by the another communication apparatus and part of the allocated RU or RU combination which is
 - 15 considered to be idle matches one of two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is adapted to the one of the two or more RUs or RU combinations associated with the allocated RU or RU combination.
- 20 2. The communication apparatus according to claim 1, wherein the RU adaptation procedure is disabled for the another communication apparatus when the allocated RU or RU combination has a size not larger than 242 tones.
3. The communication apparatus according to claim 1, wherein the common
- 25 info field of the trigger frame comprises a field which indicates additional packet padding duration.
4. The communication apparatus according to claim 1, wherein the allocated RU or RU combination is associated with the two or more RU or RU combinations.
- 30 5. The communication apparatus according to claim 1, wherein each of the two or more RU or RU combinations associated with the allocated RU or RU combination has a size not larger than the allocated RU or RU combination.
- 35 6. The communication apparatus according to claim 1, wherein each of the two or more RU or RU combinations associated with the allocated RU or RU

combination is a large-size RU or RU combination allowed for Extremely High Throughput wireless local area network (EHT WLAN).

7. A communication apparatus comprising:

5 circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and

a transmitter, which in operation, transmits the generated trigger frame;

wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure is disabled for another communication apparatus addressed by the each of the plurality of user info field
10 and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and

wherein when the RU adaptation procedure is performed by the another communication apparatus and part of the allocated RU or RU combination which is considered to be idle does not match any of two or more RUs or RU combinations associated with the allocated RU or RU combination but covers at least one of the two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated RU or RU combination is adapted to the at least one of the two or more RUs or RU combinations associated with the allocated RU or RU
15 combination which overlaps with the part of the allocated RU or RU combination to the most extent.

8. A communication apparatus comprising:

25 circuitry, which in operation, generates a trigger frame comprising a common info field and a plurality of user info fields; and

a transmitter, which in operation, transmits the generated trigger frame;

wherein each of the plurality of user info fields comprises a first field which indicates whether a resource unit (RU) adaptation procedure is disabled for another communication apparatus addressed by the each of the plurality of user info field
30 and a second field which indicates a RU or RU combination allocated to the another communication apparatus, and

wherein when the RU adaptation procedure is performed by the another communication apparatus and part of the allocated RU or RU combination which is considered to be idle does not match or cover any of two or more RUs or RU combinations associated with the allocated RU or RU combination, the allocated
35 RU or RU combination is not adapted to any of the two or more RUs or RU combinations associated with the allocated RU or RU combination.

9. The communication apparatus according to claim 1, wherein the communication apparatus further comprises a receiver, which in operation, receives a trigger-based physical layer protocol data unit (PPDU) transmitted by the another communication apparatus.

10. The communication apparatus according to claim 9, wherein the circuitry is further configured to:

perform signal detection using one or more fields of the trigger-based PPDU transmitted in all 20MHz subchannels corresponding to the allocated RU or RU combination, and

determine a RU or RU combination which is adapted by the another communication apparatus from the allocated RU or RU combination according to clear channel assessment (CCA) results.

11. The communication apparatus according to claim 9, wherein a universal signal (U-SIG) field of the trigger-based PPDU comprises a signaling field which indicates a RU or RU combination which is adapted by the another communication apparatus from the allocated RU or RU combination according to CCA results.

12. The communication apparatus according to claim 11, wherein the signaling field further indicates puncturing channel information in an 80MHz frequency segment in which the U-SIG field of the trigger-based PPDU is transmitted.

13. The communication apparatus according to claim 9, wherein the circuitry is further configured to apply blind decoding to the received trigger-based PPDU according to the two or more RU or RU combinations associated with the allocated RU or RU combination.

14. A communication method comprising:
 generating a trigger frame comprising a common info field and a plurality of user info fields; and
 transmitting the generated trigger frame;
 wherein each of the plurality of user info fields comprises a first field which indicates whether a RU adaptation procedure is disabled for a communication apparatus addressed by the each of the plurality of user info field and a second field

which indicates a RU or RU combination allocated to the communication apparatus,
and

- 5 wherein when the RU adaptation procedure is performed by another
communication apparatus and part of the allocated RU or RU combination which is
considered to be idle matches one of two or more RUs or RU combinations
associated with the allocated RU or RU combination, the allocated RU or RU
combination is adapted to the one of the two or more RUs or RU combinations
associated with the allocated RU or RU combination.