CLAIMS

1. A capability indication method in a wireless local area network, comprising:

determining, by a first device, capability information, and sending, by the first device, the capability information to a second device, wherein

the capability information comprises a nominal packet padding subfield, the nominal packet padding subfield indicates a corresponding nominal packet padding value used when the second device sends a physical layer protocol data unit, PPDU, to the first device, to enable the second device to determine, based on the nominal packet padding value, duration of a packet extension PE field comprised in the PPDU, and the nominal packet padding value is for all numbers of spatial streams, NSSs, and all RU allocations that the first device supports and for at least two modulation schemes used by the second device on a configured frequency domain resource or a configured spatial stream.

2. A capability determining method in a wireless local area network, comprising:

receiving, by a second device, capability information from a first device, wherein the capability information comprises a nominal packet padding subfield, the nominal packet padding subfield indicates a corresponding nominal packet padding value used when the second device sends a physical layer protocol data unit, PPDU, to the first device, and the nominal packet padding value is for all numbers of spatial streams, NSSs, and all RU allocations that the first device supports and for at least two modulation schemes used by the second device on a configured frequency domain resource or a configured spatial stream;

determining, by the second device, the nominal packet padding value based on the configured frequency domain resource and spatial stream and the at least two used modulation schemes; and

determining, by the second device based on the nominal packet padding value, duration of a packet extension PE field comprised in the PPDU, wherein the duration of the PE field enables the first device to have enough time to parse the PPDU received from the second device.

3. The method according to claim 1 or 2, wherein the capability information further comprises a physical layer packet extension thresholds present subfield, and a value of the physical layer packet extension thresholds present subfield is 0.

4. The method according to claim 2, wherein determining, by the second device, the nominal packet padding value based on the configured frequency domain resource and spatial stream and the at least two used modulation schemes comprises:

determining, by the second device, the nominal packet padding value based on a configured number of spatial streams, the configured frequency domain resource, and a highest-order modulation scheme in the at least two modulation schemes.

5. The method according to any one of claims 1 to 4, wherein

a status value of the nominal packet padding subfield is 0, and the nominal packet padding value is 8 microseconds;

a status value of the nominal packet padding subfield is 1, and the nominal packet padding value is 16 microseconds;

a status value of the nominal packet padding subfield is 2, and the nominal packet padding value is 20 microseconds; or

a status value of the nominal packet padding subfield is 3, the second device sends the PPDU to the first device by using the at least two modulation schemes, and the nominal packet padding value is 20 microseconds.

6. The method according to any one of claims 1 to 4, wherein a status value of the nominal packet padding subfield is 3, a constellation index corresponding to the highest-order modulation scheme in the at least two modulation schemes is less than or equal to a constellation index threshold, and one or more of the following conditions are met, the nominal packet padding value is 16 microseconds; otherwise, the nominal packet padding value is 20 microseconds:

a resource unit RU/multi-resource unit MRU allocation size is less than or equal to a size threshold, a size of an RU or an MRU corresponding to the highest-order modulation scheme is less than or equal to a size threshold, or a number of space-time streams NSS is less than or equal to a number of spatial streams threshold.

7. The method according to claim 6, wherein the constellation index threshold is 5, the size threshold is 2×996-tone, and the number of spatial streams threshold is 8 or 16.

8. A capability indication method in a wireless local area network, comprising:

determining, by a first device, capability information, and sending, by the first device, the capability information to a second device, wherein

the capability information comprises a physical layer packet extension thresholds field, the physical layer packet extension thresholds field comprises a resource unit, RU, index bitmask subfield, a number of space-time streams, NSS, subfield, and a physical layer packet extension thresholds information field, the physical layer packet extension thresholds information field comprises a plurality of sets of packet extension thresholds subfields corresponding to different nominal packet padding values, each set of packet extension thresholds subfields indicates a modulation threshold corresponding to an NSS being n and an RU/MRU corresponding to a sequential number b, the modulation threshold is used by the second device to determine a nominal packet padding value used to send a physical layer protocol data unit, PPDU, to the first device, and the nominal packet padding value is for the first device supporting the second device in using at least two modulation schemes when the configured NSS is n and the RU/MRU corresponds to

the sequential number b, wherein a value range of n is a subset of [N1, ..., N2], both N1 and N2 are integers greater than or equal to 1, a value range of b is a subset of [M1, ..., M2], and M1 and M2 are integers greater than or equal to 0.

9. A capability determining method in a wireless local area network, comprising:

receiving, by a second device, capability information sent by a first device, wherein the capability information comprises a physical layer packet extension thresholds field, the physical layer packet extension thresholds field comprises a resource unit, RU, index bitmask subfield, a number of space-time streams, NSS, subfield, and a physical layer packet extension thresholds information field, the physical layer packet extension thresholds information field comprises a plurality of sets of packet extension thresholds subfields corresponding to different nominal packet padding values, each set of packet extension thresholds subfields indicates a modulation threshold corresponding to an NSS being n and an RU/MRU corresponding to a sequential number b, the modulation threshold is used by the second device to determine a nominal packet padding value used to send a physical layer protocol data unit, PPDU, to the first device, and the nominal packet padding value is for the first device supporting the second device in using at least two modulation schemes when the configured NSS is n and the RU/MRU corresponds to the sequential number b, wherein a value range of n is a subset of [N1, ..., N2], both N1 and N2 are integers greater than or equal to 1, a value range of b is a subset of [M1, ..., M2], and both M1 and M2 are integers greater than or equal to 0;

determining, by the second device, the nominal packet padding value based on a configured frequency domain resource and spatial stream and the at least two used modulation schemes; and

determining, by the second device based on the nominal packet padding value, duration of a packet extension, PE, field comprised in the PPDU, wherein the duration of the PE field enables the first device to have enough time to parse the PPDU received from the second device.

10. The method according to claim 8 or 9, wherein the capability information further comprises a physical layer packet extension thresholds present subfield, and a value of the physical layer packet extension thresholds present subfield is 1.

11. The method according to any one of claims 8 to 10, wherein each set of packet extension thresholds subfields meets one or more of the following:

a nominal packet padding value corresponding to the at least two modulation schemes is a nominal packet padding value corresponding to a second modulation scheme, a constellation index corresponding to the second modulation scheme is a sum of a constellation index corresponding to a highest-order modulation scheme in the at least two modulation schemes and a first value, and the first value is not equal to 0;

a modulation threshold corresponding to the NSS being n and the RU corresponding to the

sequential number b is a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b', b' is a sum of b and a second value, and the second value is not equal to 0;

a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b is a modulation threshold corresponding to the NSS being n' and the RU corresponding to the sequential number b, n' is a sum of n and a third value, and the third value is not equal to 0; or

a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b corresponds to a nominal packet padding value of 20 microseconds.

12. A communication apparatus, comprising:

a processing module, configured to determine capability information, wherein the capability information comprises a nominal packet padding subfield, the nominal packet padding subfield indicates a corresponding nominal packet padding value used when a second device sends a physical layer protocol data unit, PPDU, to the communication apparatus, to enable the second device to determine, based on the nominal packet padding value, duration of a packet extension, PE, field comprised in the PPDU, and the nominal packet padding value is for all numbers of spatial streams NSSs and all RU allocations that the communication apparatus supports and for at least two modulation schemes used by the second device on a configured frequency domain resource or a configured spatial stream; and

a transceiver module, configured to send the capability information to the second device.

13. A communication apparatus, comprising:

a transceiver module, configured to receive capability information from a first device, wherein the capability information comprises a nominal packet padding subfield, the nominal packet padding subfield indicates a corresponding nominal packet padding value used when the communication apparatus sends a physical layer protocol data unit, PPDU, to the first device, and the nominal packet padding value is for all numbers of spatial streams, NSSs, and all RU allocations that the first device supports and for at least two modulation schemes used by the communication apparatus on a configured frequency domain resource or a configured spatial stream; and

a processing module, configured to: determine the nominal packet padding value based on the configured frequency domain resource and spatial stream and the at least two used modulation schemes, and determine, based on the nominal packet padding value, duration of a packet extension, PE, field comprised in the PPDU, wherein the duration of the PE field enables the first device to have enough time to parse the PPDU received from the communication apparatus.

14. The apparatus according to claim 12 or 13, wherein the capability information further

comprises a physical layer packet extension thresholds present subfield, and a value of the physical layer packet extension thresholds present subfield is 0.

15. The apparatus according to claim 13, wherein the processing module is specifically configured to:

determine the nominal packet padding value based on a configured number of spatial streams, the configured frequency domain resource, and a highest-order modulation scheme in the at least two modulation schemes.

16. The apparatus according to any one of claims 12 to 15, wherein a status value of the nominal packet padding subfield is 0, and the nominal packet padding value is 8 microseconds;

a status value of the nominal packet padding subfield is 1, and the nominal packet padding value is 16 microseconds;

a status value of the nominal packet padding subfield is 2, and the nominal packet padding value is 20 microseconds; or

a status value of the nominal packet padding subfield is 3, the second device sends the PPDU to the first device by using the at least two modulation schemes, and the nominal packet padding value is 20 microseconds.

17. The apparatus according to any one of claims 12 to 15, wherein when a status value of the nominal packet padding subfield is 3, a constellation index corresponding to the highest-order modulation scheme in the at least two modulation schemes is less than or equal to a constellation index threshold, and one or more of the following conditions are met, the nominal packet padding value is 16 microseconds; otherwise, the nominal packet padding value is 20 microseconds:

a resource unit RU/multi-resource unit MRU allocation size is less than or equal to a size threshold, a size of an RU or an MRU corresponding to the highest-order modulation scheme is less than or equal to a size threshold, or a number of space-time streams NSS is less than or equal to a number of spatial streams threshold.

18. The apparatus according to claim 17, wherein the constellation index threshold is 5, the size threshold is 2×996-tone, and the number of spatial streams threshold is 8 or 16.

19. A communication apparatus, comprising:

a processing module, configured to determine capability information, wherein the capability information comprises a physical layer packet extension thresholds field, the physical layer packet extension thresholds field comprises a resource unit, RU, index bitmask subfield, a number of space-time streams, NSS, subfield, and a physical layer packet extension thresholds information field, the physical layer packet extension thresholds information field comprises a plurality of sets of packet extension thresholds subfields corresponding to different nominal packet padding values, each set of packet extension thresholds subfields indicates a modulation threshold corresponding

to an NSS being n and an RU/MRU corresponding to a sequential number b, the modulation threshold is used by the second device to determine a nominal packet padding value used to send a physical layer protocol data unit, PPDU, to the communication apparatus, and the nominal packet padding value is for the communication apparatus supporting the second device in using at least two modulation schemes when the configured NSS is n and the RU/MRU corresponds to the sequential number b, wherein a value range of n is a subset of [N1, ..., N2], both N1 and N2 are integers greater than or equal to 1, a value range of b is a subset of [M1, ..., M2], and M1 and M2 are integers greater than or equal to 0; and

a transceiver module, configured to send the capability information to the second device.

20. A communication apparatus, comprising:

a transceiver module, configured to receive capability information sent by a first device, wherein the capability information comprises a physical layer packet extension thresholds field, the physical layer packet extension thresholds field comprises a resource unit, RU, index bitmask subfield, a number of space-time streams, NSS, subfield, and a physical layer packet extension thresholds information field, the physical layer packet extension thresholds information field comprises a plurality of sets of packet extension thresholds subfields corresponding to different nominal packet padding values, each set of packet extension thresholds subfields indicates a modulation threshold corresponding to an NSS being n and an RU/MRU corresponding to a sequential number b, the modulation threshold is used by the communication apparatus to determine a nominal packet padding value used to send a physical layer protocol data unit, PPDU, to the first device, and the nominal packet padding value is for the first device supporting the communication apparatus in using at least two modulation schemes when the configured NSS is n and the RU/MRU corresponds to the sequential number b, wherein a value range of n is a subset of [N1, ..., N2], both N1 and N2 are integers greater than or equal to 1, a value range of b is a subset of [M1, ..., M2], and both M1 and M2 are integers greater than or equal to 0; and

a processing module, configured to: determine the nominal packet padding value based on the configured frequency domain resource and spatial stream and the at least two used modulation schemes, and determine, based on the nominal packet padding value, duration of a packet extension, PE, field comprised in the PPDU, wherein the duration of the PE field enables the first device to have enough time to parse the PPDU received from the communication apparatus.

21. The apparatus according to claim 19 or 20, wherein the capability information further comprises a physical layer packet extension thresholds present subfield, and a value of the physical layer packet extension thresholds present subfield is 1.

22. The apparatus according to any one of claims 19 to 21, wherein each set of packet extension thresholds subfields meets one or more of the following:

a nominal packet padding value corresponding to the at least two modulation schemes is a nominal packet padding value corresponding to a second modulation scheme, a constellation index corresponding to the second modulation scheme is a sum of a constellation index corresponding to a highest-order modulation scheme in the at least two modulation schemes and a first value, and the first value is not equal to 0;

a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b is a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b', b' is a sum of b and a second value, and the second value is not equal to 0;

a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b is a modulation threshold corresponding to the NSS being n' and the RU corresponding to the sequential number b, n' is a sum of n and a third value, and the third value is not equal to 0; or

a modulation threshold corresponding to the NSS being n and the RU corresponding to the sequential number b corresponds to a nominal packet padding value of 20 microseconds.

23. A chip, wherein the chip comprises at least one processor and an interface, the processor is configured to read and execute instructions stored in a memory, and when the instructions are run, the chip is enabled to perform the method according to any one of claims 1 to 11.

24. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, the computer program comprises program instructions, and when the program instructions are executed by a computer, the computer is enabled to perform the method according to any one of claims 1 to 11.

25. A computer program product, wherein the computer program product comprises a computer program, and when the computer program is run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 11.