What is claimed is:

1. A method comprising:

avoiding collisions by transmitting a packet length field of a packet, the packet length field including a packet length, before transmitting a header of the packet.

2. The method of claim 1, comprising:

providing the packet length in time units; and

avoiding transmitting based on the packet length.

3. The method of claim 2, comprising:

modulating the packet length field according to Biphase Shift Keying (BPSK); and

spreading the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

4. The method of claim 2, comprising:

modulating the packet length field according to Quadrature Phase Shift Keying (QPSK); and

spreading the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

5. The method of claim 1 comprising:

transmitting the header in a physical layer which is used for beamforming and internal connection and in a lower modulation rate than the modulation rate which is used for data transmission.

6. The method of claim 1 comprising:

transmitting the packet according to a single carrier (SC) modulation scheme.

7. The method of claim 1 comprising transmitting the packet according to a multiple carriers modulation scheme.

8. The method of claim 1 comprising:

receiving said packet length field either in a single carrier or in a multiple carriers;

decoding the packet length field information; and

avoiding starting transmission based on the packet length information.

9. A wireless communication device comprising:

a transmitter to transmit a packet length field before transmitting a header of said packet for avoiding collisions based on the packet length.

10. The wireless communication device of claim 9, wherein the packet length field comprises a packet length in time units.

11. The wireless communication device of claim 9, comprising:

a modulator to modulate the packet length field according to Biphase Shift Keying (BPSK); and

a spreader to spread the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

12. The wireless communication device of claim 9, comprising:

a modulator to modulate the packet length field according to Quadrature Phase Shift Keying (QPSK); and

a spreader to spread the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

13. The wireless communication device of claim 9, wherein the transmitter is able to transmit the a header in a physical layer which in use for a beamforming and internal connection and in a lower modulation rate than the modulation rate of which is in use for data transmission.

14. The wireless communication device of claim 9, wherein the transmitter is able to transmit the packet according to a single carrier (SC) modulation scheme.

15. The wireless communication device of claim 9, wherein the transmitter is able to transmit the packet according to a multiple carrier modulation scheme.

16. The wireless communication device of claim 9 comprising:

a receiver to receive said packet length field either in single carrier or in multiple carriers;

a decoder to decode the packet length field information; and

a communication processor to avoid a start transmission based on the packet length information.

17. A wireless communication system comprising two or more stations, wherein a station comprises:

a transmitter to transmit a packet length field including a packet length before transmitting a header of said packet for avoiding collisions based on the packet length.

18. The wireless communication device of claim 17, wherein the packet length is in time units.

19. The wireless communication system of claim 17, wherein the station comprises:

a modulator to modulate the packet length field according to Biphase Shift Keying (BPSK); and

a spreader to spread the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

20. The wireless communication system of claim 17, wherein the station comprises:

a modulator to modulate the packet length field according to Quadrature Phase Shift Keying (QPSK); and

a spreader to spread the modulated packet length field by a sequence selected from a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

21. The wireless communication system of claim 17, wherein the transmitter is able to transmit the a header in a physical layer which in use for a beamforming and internal connection and in a lower modulation rate than the modulation rate of which is in use for data transmission.

22. The wireless communication system of claim 17, wherein the transmitter is able to transmit the packet according to a single carrier (SC) modulation scheme.

23. The wireless communication system of claim 17, wherein the transmitter is able to transmit the packet according to a multiple carrier modulation scheme.

24. The wireless communication system of claim 17, wherein the station comprises:

a receiver to receive said packet length field either in single carrier or in multiple carriers;

a decoder to decode the packet length field information; and

a communication processor to avoid a start transmission based on the packet length information.

What is claimed is:

1. A method comprising: avoiding collisions by transmitting a packet length field of a wireless communication packet before transmitting a header of the packet in a Physical Layer (PHY), which is used for beamforming, wherein the packet length field includes a packet length of the packet encoded in a low rate modulation decodable by both multiple-carrier and Single Carrier (SC) receivers, and wherein the header is to be transmitted in the physical layer at a lower modulation rate than a modulation rate, which is used for data transmission.

2. The method of claim 1, wherein the packet length field includes the packet length of the packet in time units.

3. The method of claim 1, comprising: modulating the packet length field according to Biphase Shift Keying (BPSK); and spreading the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

4. The method of claim 1, comprising: modulating the packet length field according to Quadrature Phase Shift Keying (QPSK); and spreading the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

5. The method of claim 1 comprising: transmitting the packet according to a SC modulation scheme.

6. The method of claim 1 comprising transmitting the packet according to a multiple carrier modulation scheme.

7. The method of claim 1 comprising transmitting the header of said packet immediately successive to said packet length field.

8. A wireless communication device comprising: a transmitter; and a communication processor to control the transmitter to transmit a packet length field of a wireless communication packet before transmitting a header of said packet in a physical layer (PHY), which is used for beamforming, for avoiding collisions based on the packet length, wherein the packet length field includes a packet length of the packet encoded in a low rate modulation decodable by both multiple-carrier and Single Carrier (SC) receivers, and wherein the header is to be transmitted in the physical layer at a lower modulation rate than a modulation rate, which is used for data transmission.

9. The wireless communication device of claim 8, wherein the packet length field comprises the packet length of the packet in time units.

10. The wireless communication device of claim 8, comprising: a modulator to modulate the packet length field according to Biphase Shift Keying (BPSK); and a spreader to spread the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

11. The wireless communication device of claim 8, comprising: a modulator to modulate the packet length field according to Quadrature Phase Shift Keying (QPSK); and a spreader to spread the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

12. The wireless communication device of claim 8, wherein the transmitter is able to transmit the packet according to a SC modulation scheme.

13. The wireless communication device of claim 8, wherein the transmitter is able to transmit the packet according to a multiple carrier modulation scheme.

14. The wireless communication device of claim 8, wherein said transmitter is to transmit said packet length field immediately successive to a preamble of said packet, and to transmit said header immediately successive to said packet length field.

15. A wireless communication system comprising at least one station, the station comprising: one or more antennas; and a transceiver to communicate a packet length field of a wireless communication packet before communicating a header of said packet in a Physical layer (PHY), which is used for beamforming, for avoiding collisions based on the packet length, wherein the packet length field includes a packet length of the packet encoded in a low rate modulation decodable by both multiple-carrier and Single Carrier (SC) receiver, and wherein the header is to be communicated in the physical layer at a lower modulation rate than a modulation rate, which is used for data transmission.

16. The wireless communication system of claim 15, wherein the packet length of the packet is in time units.

17. The wireless communication system of claim 15, wherein the station comprises: a modulator to modulate the packet length field according to Biphase Shift Keying (BPSK); and a spreader to spread the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

18. The wireless communication system of claim 15, wherein the station comprises: a modulator to modulate the packet length field according to Quadrature Phase Shift Keying (QPSK); and a spreader to spread the modulated packet length field by a sequence selected from the group consisting of a Golay sequence, a maximum length sequence, a Walsh Hadamard sequence and a constant amplitude zero autocorrelation (CAZAC) sequence.

19. The wireless communication system of claim 15, wherein the transceiver is able to communicate the packet according to a SC modulation scheme.

20. The wireless communication system of claim 15, wherein the transceiver is able to communicate the packet according to a multiple carrier modulation scheme.

21. The wireless communication system of claim 15, wherein the transceiver comprises a receiver to receive said packet length field either in single carrier or in multiple carriers, and wherein the station comprises: a decoder to decode the packet length field information; and a communication processor to avoid a start of a transmission based on the packet length information.