CLAIMS

1. A physical layer protocol data unit sending method, comprising:

generating a physical layer protocol data unit (PPDU), wherein the PPDU comprises a control frame, the control frame comprises N first user information fields, an association identifier in the first user information field indicates that the first user information field carries first information, the first information comprises information for protecting the control frame, and N is an integer greater than or equal to 1; and

sending the PPDU.

2. The method according to claim 1, wherein the first information comprises at least one of a key identifier, a packet number (PN), or message integrity code (MIC).

3. A physical layer protocol data unit receiving method, comprising:

receiving a physical layer protocol data unit (PPDU), wherein the PPDU comprises a control frame, the control frame comprises N first user information fields, an association identifier in the first user information field indicates that the first user information field carries first information, the first information comprises information for protecting the control frame, and N is an integer greater than or equal to 1; and

parsing the PPDU.

4. The method according to claim 3, wherein the first information comprises at least one of a key identifier, a packet number (PN), or message integrity code (MIC).

5. The method according to claim 4, wherein the control frame carries the MIC, and the method further comprises:

determining local MIC; and

when it is determined that the local MIC matches the MIC carried in the control frame, considering that the control frame is not forged.

6. The method according to claim 4 or 5, wherein the control frame carries the PN, and the method further comprises:

when it is determined that the PN carried in the control frame is greater than a previously received PN, considering that no replay attack occurs in the control frame.

7. The method according to any one of claims 1 to 6, wherein any one of N association identifiers in the N first user information fields is a predefined value.

8. The method according to any one of claims 1 to 7, wherein a common field in the control frame carries second information, and the second information indicates that the control frame carries the first information.

9. The method according to any one of claims 1 to 8, wherein a common field in the control frame carries third information, and the third information indicates a location of at least one first user information field in the N first user information fields.

10. The method according to any one of claims 1 to 9, wherein at least one of a common field or a frame check sequence (FCS) field in the control frame carries fourth information, and the fourth information comprises information for protecting the control frame.

11. The method according to any one of claims 1 to 10, wherein

the frame check sequence (FCS) field in the control frame carries a first exclusive OR result at a first location, the first exclusive OR result is an exclusive OR result of corresponding cyclic redundancy code (CRC) at the first location of the FCS field and fifth information, the fifth information comprises information for protecting the control frame, and a number of bits of a bit value corresponding to the CRC at the first location of the FCS field is the same as a number of bits of a bit value corresponding to the fifth information.

12. The method according to any one of claims 1 to 11, wherein duration from an end of a last first user information field in the N first user information fields to an end of the control frame is greater than or equal to a minimum trigger frame processing time of a first-type device, and the first-type device is a device capable of interpreting the association identifier in the first user information field.

13. A communication apparatus, wherein the communication apparatus comprises a module configured to perform the method according to any one of claims 1, 2 and 7 to 12, or the communication apparatus comprises a module configured to perform the method according to any one of claims 3 to 12.

14. A communication apparatus, comprising a processor, wherein the processor is coupled to a memory, and configured to execute instructions in the memory, to implement the method according to any one of claims 1, 2 and 7 to 12, or implement the method according to any one of claims 3 to 12.

15. A computer-readable storage medium, wherein the computer-readable storage medium stores computer instructions, and when the computer instructions are executed by an apparatus, the apparatus is enabled to implement the method according to any one of claims 1, 2 and 7 to 12, or the apparatus is enabled to implement the method according to any one of claims 3 to 12.