CLAIMS

1. A method for data transmission, performed by a sender device, the method comprising:

generating a target Radio Link Control (RLC) Protocol Data Unit (PDU), the target RLC PDU comprising a header and the header comprising only a fixed portion;

wherein when a data domain of the target RLC PDU comprises only a complete RLC Service Data Unit (SDU), the fixed portion does not comprise a Sequence Number (SN) field;

when the data domain of the target RLC PDU comprises only a segment of the complete RLC SDU, the fixed portion comprises the SN field, and a value of the SN field in the fixed portion of the header of the target RLC PDU is the same as a value of an SN field in a fixed portion of a header of an RLC PDU comprising another segment of the complete RLC SDU, wherein a length of the SN field is determined according to a number of RLC SDUs to be segmented among RLC SDUs to be transmitted, a maximum numerical value corresponding to the length of the SN field is greater than or equal to the number of the RLC SDUs to be segmented, and the RLC SDUs to be transmitted comprise the complete RLC SDU; and

sending the target RLC PDU to a Media Access Control (MAC)-layer entity.

2. The method of claim 1, wherein when the fixed portion comprises the SN field, the length of the SN field in the target RLC PDU is independent of a transmission requirement for data carried in the segment of the complete RLC SDU.

3. The method of any one of claims 1-2, wherein a length of the fixed portion is an integral multiple of 8 bits.

4. A method for data transmission, performed by a receiver device, the method comprising:

receiving a target Radio Link Control (RLC) Protocol Data Unit (PDU), the target RLC PDU comprising a header and the header comprising only a fixed portion; and

when the fixed portion does not comprise a Sequence Number (SN) field, determining that a data domain of the target RLC PDU comprises only a complete RLC Service Data Unit (SDU), and directly re-assembling the target RLC PDU without assembling the target RLC PDU;

when the fixed portion comprises the SN field, determining that the data domain of the target RLC PDU comprises only a segment of the complete RLC SDU, and assembling the complete RLC SDU according to a value of the SN field, wherein the value of the SN field in the fixed portion of the header of the target RLC PDU is the same as a value of an SN field in a fixed portion of a header of an RLC PDU comprising another segment of the complete RLC SDU.

5. The method of claim 4, wherein when the fixed portion comprises the SN field, a length of the SN field in the target RLC PDU is independent of a transmission requirement for data carried in the segment of the target RLC PDU.

6. The method of claim 4 or 5, wherein a length of the fixed portion is an integral multiple of 8 bits.

7. A sender device, comprising:

a processing module, configured to generate a target Radio Link Control (RLC) Protocol Data Unit (PDU), the target RLC PDU comprising a header and the header comprising only a fixed portion;

wherein when a data domain of the target RLC PDU comprises only a complete RLC Service Data Unit (SDU), the fixed portion does not comprise a Sequence Number (SN) field;

when the data domain of the target RLC PDU comprises only a segment of the complete RLC SDU, the fixed portion comprises the SN field, and a value of the SN field in the fixed portion of the header of the target RLC PDU is the same as a value of an SN field in a fixed portion of a header of an RLC PDU comprising another segment of the complete RLC SDU, wherein a length of the SN field is determined according to a number of RLC SDUs to be segmented among RLC SDUs to be transmitted, a maximum numerical value corresponding to the length of the SN field is greater than or equal to the number of the RLC SDUs to be segmented, and the RLC SDUs to be

transmitted comprise the complete RLC SDU; and

a transceiver module, configured to send the target RLC PDU to a Media Access Control (MAC)-layer entity.

8. The sender device of claim 7, wherein when the fixed portion comprises the SN field, the length of the SN field in the target RLC PDU is independent of a transmission requirement for data carried in the segment of the complete RLC SDU.

9. The sender device of any one of claims 7-8, wherein a length of the fixed portion is an integral multiple of 8 bits.

10. A receiver device, comprising:

a transceiver module, configured to receive a target Radio Link Control (RLC) Protocol Data Unit (PDU), the target RLC PDU comprising a header and the header comprising only a fixed portion; and

a processing module, configured to:

when the fixed portion does not comprise a Sequence Number (SN) field, determine that a data domain of the target RLC PDU comprises only a complete RLC Service Data Unit (SDU), and directly re-assemble the target RLC PDU without assembling the target RLC PDU;

when the fixed portion comprises the SN field, determine that the data domain of the target RLC PDU comprises only a segment of the complete RLC SDU, and assemble the complete RLC SDU according to a value of the SN field, wherein the value of the SN field in the fixed portion of the header of the target RLC PDU is the same as a value of an SN field in a fixed portion of a header of an RLC PDU comprising another segment of the complete RLC SDU.

11. The receiver device of claim 10, wherein when the fixed portion comprises the SN field, a length of the SN field in the target RLC PDU is independent of a transmission requirement for data carried in the segment of the target RLC PDU.

12. The receiver device of claim 10 or 11, wherein a length of the fixed portion is an integral multiple of 8 bits.