

WHAT IS CLAIMED IS:

1. A data transmission method, applied to a terminal comprising a Packet Data Convergence Protocol (PDCP) layer entity, a first Radio Link Control (RLC) layer entity, a second RLC layer entity and a Media Access Control (MAC) layer entity, wherein the method comprises:

when detecting that a data duplication transmission function of the PDCP layer entity is activated, enabling the first RLC layer entity, wherein the second RLC layer entity is in an enabled status; and

invoking the PDCP layer entity to determine a first PDCP Protocol Data Unit (PDCP PDU) associated with a first PDCP Service Data Unit (PDCP SDU), and sending the first PDCP PDU to the first RLC layer entity, wherein the first PDCP PDU is configured for the first RLC layer entity and the MAC layer entity to process the first PDCP PDU into a MAC PDU and send the MAC PDU,

wherein after enabling the first RLC layer entity when detecting that the data duplication transmission function of the PDCP layer entity is activated, the method further comprises:

when detecting that the PDCP layer entity receives a second PDCP SDU, invoking the PDCP layer entity to encapsulate the second PDCP SDU into a second PDCP PDU; and

invoking the PDCP layer entity to send the second PDCP PDU to the first RLC layer entity and the second RLC layer entity, and

wherein after sending the second PDCP PDU to the first RLC layer entity and the second RLC layer entity, the method further comprises:

when detecting that the data duplication transmission function of the PDCP layer entity is deactivated, invoking the PDCP layer entity to send a preset indication to the first RLC layer entity; and

invoking the first RLC layer entity to receive the preset indication, and discarding a second RLC SDU in the first RLC layer entity and corresponding to the second PDCP PDU in response to the preset indication, wherein the second RLC SDU is not encapsulated and processed into a second RLC PDU by the first RLC layer entity.

2. The method according to claim 1, wherein the invoking the PDCP layer entity to determine the first PDCP PDU associated with the first PDCP SDU comprises:

when detecting that the PDCP layer entity satisfies a preset condition, invoking the PDCP layer entity to determine a pre-stored PDCP PDU copy as the first PDCP PDU associated with the first PDCP SDU.

3. The method according to claim 2, wherein the preset condition comprises at least one of followings: a discard timer in the PDCP layer entity does not time out, a status report of the PDCP layer entity does not indicate to discard the first PDCP PDU, and the PDCP layer entity does not receive an indication of discarding the first PDCP PDU sent by the second RLC layer entity.

4. The method according to any one of claims 1 to 3, wherein the first PDCP PDU is configured for the first RLC layer entity to encapsulate the first PDCP PDU into a first RLC PDU and send the first RLC PDU to the MAC layer entity, and the first RLC PDU is configured for the MAC layer entity to encapsulate the first RLC PDU into the MAC PDU and send the MAC PDU.

5. A data transmission method, applied to a terminal comprising a Packet Data Convergence Protocol (PDCP) layer entity, a first Radio Link Control (RLC) layer entity, a second RLC layer entity and a Media Access Control (MAC) layer entity, wherein the method comprises:

when detecting that a data duplication transmission function of the PDCP layer entity is activated, enabling the first RLC layer entity, wherein the second RLC layer entity is in an enabled status;

invoking the first RLC layer entity to receive a first RLC Service Data Unit (RLC SDU) from the second RLC layer entity; and

invoking the first RLC layer entity and the MAC layer entity to process the first RLC SDU into a MAC Protocol Data Unit (MAC PDU) and send the MAC PDU,

wherein after enabling the first RLC layer entity when detecting that the data duplication

transmission function of the PDCP layer entity is activated, the method further comprises:

when detecting that the PDCP layer entity receives a PDCP SDU, invoking the PDCP layer entity to encapsulate the PDCP SDU into a PDCP PDU; and

invoking the PDCP layer entity to send the PDCP PDU to the first RLC layer entity and the second RLC layer entity, and

wherein after sending the PDCP PDU to the first RLC layer entity and the second RLC layer entity, the method further comprises:

when detecting that the data duplication transmission function of the PDCP layer entity is deactivated, invoking the PDCP layer entity to send a preset indication to the first RLC layer entity; and

invoking the first RLC layer entity to receive the preset indication, and discarding a second RLC SDU in the first RLC layer entity corresponding to the PDCP PDU in response to the preset indication, wherein the second RLC SDU is not encapsulated and processed into a second RLC PDU by the first RLC layer entity.

6. The method according to claim 5, wherein the invoking the first RLC layer entity and the MAC layer entity to process the first RLC SDU into the MAC PDU and send the MAC PDU comprises:

invoking the first RLC layer entity to encapsulate the first RLC SDU into a first RLC PDU and send the first RLC PDU to the MAC layer entity; and

invoking the MAC layer entity to encapsulate the first RLC PDU into the MAC PDU and send the MAC PDU.

7. A terminal, comprising a processor, a memory, a communication interface, and one or more programs stored in the memory and configured to be executed by a processor, wherein the programs comprise instructions to:

when detecting that a data duplication transmission function of a Packet Data Convergence Protocol (PDCP) layer entity is activated, enabling a first Radio Link Control (RLC) layer entity, wherein a second RLC layer entity is in an enabled status; and

invoke the PDCP layer entity to determine a first PDCP Protocol Data Unit (PDCP PDU)

associated with a first PDCP Service Data Unit (PDCP SDU), and sending the first PDCP PDU to the first RLC layer entity, wherein the first PDCP PDU is configured for the first RLC layer entity and a Media Access Control (MAC) layer entity to process the first PDCP PDU into a MAC PDU and send the MAC PDU,

wherein the programs further comprise instructions to:

when detecting that the PDCP layer entity receives a second PDCP SDU, invoking the PDCP layer entity to encapsulate the second PDCP SDU into a second PDCP PDU; and

invoke the PDCP layer entity to send the second PDCP PDU to the first RLC layer entity and the second RLC layer entity,

when detecting that the data duplication transmission function of the PDCP layer entity is deactivated, invoking the PDCP layer entity to send a preset indication to the first RLC layer entity; and

invoke the first RLC layer entity to receive the preset indication and discard a second RLC SDU in the first RLC layer entity and corresponding to the second PDCP PDU in response to the preset indication, wherein the second RLC SDU is not encapsulated and processed into a second RLC PDU by the first RLC layer entity..

8. The terminal according to claim 7, wherein the programs further comprise instructions to:

when detecting that the PDCP layer entity satisfies a preset condition, invoking the PDCP layer entity to determine a pre-stored PDCP PDU copy as the first PDCP PDU associated with the first PDCP SDU.

9. The terminal according to claim 8, wherein the preset condition comprises at least one of followings: a discard timer in the PDCP layer entity does not time out, a status report of the PDCP layer entity does not indicate to discard the first PDCP PDU, and the PDCP layer entity does not receive an indication of discarding the first PDCP PDU sent by the second RLC layer entity.

10. The terminal according to claim 7, wherein the first PDCP PDU is configured for

the first RLC layer entity to encapsulate the first PDCP PDU into a first RLC PDU and send the first RLC PDU to the MAC layer entity, and the first RLC PDU is configured for the MAC layer entity to encapsulate the first RLC PDU into the MAC PDU and send the MAC PDU.

11. A terminal, comprising a processor, a memory, a communication interface, and one or more programs stored in the memory and configured to be executed by a processor, wherein the programs comprise instructions to:

when detecting that a data duplication transmission function of a Packet Data Convergence Protocol (PDCP) layer entity is activated, enabling a first Radio Link Control (RLC) layer entity, wherein a second RLC layer entity is in an enabled status;

invoke the first RLC layer entity to receive a first RLC Service Data Unit (RLC SDU) from the second RLC layer entity; and

invoke the first RLC layer entity and a Media Access Control (MAC) layer entity to process the first RLC Service Data Unit (RLC SDU) into a MAC Protocol Data Unit (MAC PDU) and send the MAC PDU,

wherein the programs further comprise instructions to:

when detecting that the PDCP layer entity receives a PDCP SDU, invoking the PDCP layer entity to encapsulate the PDCP SDU into a PDCP PDU; and

invoke the PDCP layer entity to send the PDCP PDU to the first RLC layer entity and the second RLC layer entity,

when detecting that the data duplication transmission function of the PDCP layer entity is deactivated, invoking the PDCP layer entity to send a preset indication to the first RLC layer entity; and

invoke the first RLC layer entity to receive the preset indication and discard a second RLC SDU in the first RLC layer entity corresponding to the PDCP PDU in response to the preset indication, wherein the second RLC SDU is not encapsulated and processed into a second RLC PDU by the first RLC layer entity.

12. The terminal according to claim 11, wherein the programs further comprise

instructions to:

invoke the first RLC layer entity to encapsulate the first RLC SDU into a first RLC PDU and send the first RLC PDU to the MAC layer entity; and

invoke the MAC layer entity to encapsulate the first RLC PDU into the MAC PDU and send the MAC PDU.

13. A computer readable storage medium storing a computer program for electronic data exchange, wherein the computer program enables a computer to perform the methods according to at least one of any one of claims 1 to 4 and any one of claims 5 to 6.