## Claims

1. A method for transmitting data, characterized in comprising:

receiving N first data packets which are transmitted from M terminals to a same first destination address by an access network element, wherein the first data packet comprises a first data packet header and a first data payload, and N is an integer and greater than 1;

combining first data payloads in the N first data packets to a single second data payload by the access network element; and

adding a second data packet header into a front part of the second data payload to form a single second data packet, wherein the second data packet comprises the second data packet header and the second data payload; a source address and a second destination address in the second data packet header are the same as those in at least one of the first data packet headers;

sending the second data packet to a server corresponding to the first destination address,

wherein the procedure of combining the first data payloads in the N first data packets to the single second data payload comprises:

concatenating the first data payloads in the N first data packets to form a single second data payload by

concatenating the first data payloads in the N first data packets according to a sequence and an amount negotiated with the server,

wherein the negotiated sequence is based on a source IP addresses or source port numbers or terminal identifications in the N first data packet headers of the N first data packets, and the negotiated amount is sum of all ~~an amount of~~ first data packets sent ~~from each of~~ by the M terminals.

2. The method for transmitting data according to claim 1, wherein each first data payload has a same length, and before the combining the first data payloads in the N first data packets to the single second data payload, the method further comprises:

payloads in the N first data packets to form the single second data payload,

wherein the first concatenating unit is specially configured to concatenate the first data payloads in the N first data packets according to a sequence and an amount negotiated with the server, and the negotiated sequence is based on a source IP addresses or source port numbers or terminal identifications in the N first data packet headers of the N first data packets; the negotiated amount is ~~an amount of~~sum of all first data packets sent ~~from each of~~by the M terminals.

7. The access network element according to claim 6, wherein the access network element further comprises:

a first negotiation module configured to send a negotiation request message for negotiating an amount of first data packets to be combined to the server, when each first data payload has a same length; and/or

a second negotiation module configured to receive a negotiation request message from the server for negotiating an amount of first data packets to be combined, when each first data payload has a same length.

8. The access network element according to claim 6, wherein the creating module comprises:

a first adding unit configured to add the second data packet header into the front part of the second data payload formed by the first concatenating unit, when each first data payload has a same length, wherein the second data packet header further comprises an amount identifier indicating an amount of the concatenated first data packets.

9. The access network element according to claim 6, wherein the creating module comprises:

a second adding unit configured to add the second data packet

header into the front part of the second data payload formed by the first concatenating unit, wherein the second data packet header further comprises an amount identifier for indicating an amount of the concatenated first data packets and length identifiers for indicating length of each first data payload.

10. The access network element according to any of claims 6-9, wherein the access network element further comprises:

a retransmission module configured to retransmit the second data packet corresponding to the second data packet header to the server, according to a retransmission instruction message containing the second data packet header sent from the server, when at least two of the first data packet headers have different source addresses.

11. A data transmission processing system, characterized in that the data transmission processing system comprises an access network element according to any of claims 6-10.

12. The data transmission process system according to claim 11, further comprising a data receiving processing device which comprises:

a receiving module configured to receive the second data packet sent from the access network element;

an acquisition module configured to acquire the N first data payloads from the second data payload of the second data packet.

13. A method for transmitting data, characterized in comprising:

a terminal and other M-1 terminals which are M terminals sending N first data packets with

a first same destination address to an access network element, wherein the first data packet comprises a first data packet header and a first data payload, and N and M are an integer and greater than 1, so that the access network element combines the first data payloads in the N first data packets to a single second data payload, adds a second data packet header into a front part of the second data payload to form a second data packet, and sends the second data packet to a server corresponding to the first destination address, wherein the second data packet comprises the second data packet header and the second data payload; a source address and a destination address in the second data packet header are the same as those in at least one of the first data packet headers,

wherein a procedure of combining the first data payloads in the N first data packets to the single second data payload comprises:

concatenating the first data payloads in the N first data packets to form the single second data payload by

concatenating the first data payloads in the N first data packets according to a sequence and an amount negotiated with the server,

wherein the negotiated sequence is based on a source IP addresses or source port numbers or terminal identifications in the N first data packet headers of the N first data packets, and the negotiated amount is ~~an amount of~~ sum of all first data packets sent ~~from each of~~by the M terminals.

14. The method according to claim 13, wherein each first data payload has a same length, and before a procedure of combining the first data payloads in the N first data packets to the single second data payload, the method further comprises:

sending, by the access network element, a negotiation request message for negotiating an amount of first data packets to be combined to the server; or

receiving, by the access network element, a negotiation request message, which is sent from the server, for negotiating an amount of first data packets to be combined.

second data payload and adding a second data packet header into a front part of the second data payload; the second data packet comprises the second data packet header and the second data payload; a source address and a destination address in the second data packet header are the same as those in at least one of the first data packet headers,

the first data payloads in the N first data packets are concatenated to form the single second data payload,

the first data payloads in the N first data packets are concatenated according to a sequence and an amount negotiated with the server;

wherein the negotiated sequence is based on a source IP addresses or source port numbers or terminal identifications in the N first data packet headers of the N first data packets;

the negotiated amount is ~~an amount of~~sum of all first data packets sent ~~from each of~~by the M terminals.

18. The data transmission process method according to claim 17, wherein each first data payload has a same length, and the method further comprises:

receiving by the server a negotiation request message for negotiating an amount of first data packets to be combined sent from the access network element; or

sending a negotiation request message for negotiating an amount of first data packets to be combined to the access network element.

19. The data transmission process method according to claim 17, wherein each first data payload has a same length; and

the second data packet header is added into the front part of the second data payload, wherein the second data packet header further comprises an amount identifier indicating an amount of the concatenated first data packets.