

CLAIMS

What is claimed is:

1. An information sending method, applied to a sending end and comprising:
sending first information to a receiving end; wherein

5 the first information is used to assist the receiving end in determining whether
to perform hybrid automatic repeat request (HARQ) feedback; and

 the first information comprises: a communication range indicator and a
geographical zone identifier of the sending end; and

 when there is at least one communication range for a multiplexed service packet
10 in one transport block, the communication range indicator is used for indicating a
maximum value of the at least one communication range.

2. The information sending method according to claim 1, wherein the first
information is indicated by using at least one of the following manners:

 physical sidelink control information;

15 direct communication interface radio resource control information; and
 a medium access control control element.

3. The information sending method according to claim 1, wherein

 the first information further comprises: auxiliary indication information within
a communication range, wherein the auxiliary indication information is used for
20 determining at least one target zone within the communication range.

4. The information sending method according to claim 1, wherein

 the communication range indicator is used for indicating at least one of the
following:

 a layer index of a geographical zone adjacent to a geographical zone in which
25 the sending end is located;

 a layer index of a geographical zone covered by a control node, wherein the
geographical zone is adjacent to a geographical zone that is covered by the control
node and in which the sending end is located;

a geographical distance between the sending end and the receiving end; and
a relationship between a geographical zone identifier of the sending end and that of the receiving end.

5 5. The information sending method according to claim 1, wherein the communication range indicator comprises one first target codepoint; and

the first target codepoint is one of at least one first preset codepoint, and each codepoint in the at least one first preset codepoint corresponds to one communication range.

10 6. The information sending method according to claim 3, wherein a manner of determining the geographical zone identifier of the sending end comprises:

determining the geographical zone identifier of the sending end according to the geographical zone division rule comprised in the first information.

15 7. The information sending method according to claim 1, wherein the first information comprises a geographical zone division rule, and the geographical zone division rule is determined by a communication range of each transmission; and

the geographical zone division rule comprises:

side length indication information of a geographical zone;

per-dimension reuse factor indication information of the geographical zone; and

20 a geographical zone identifier calculation manner.

8. The information sending method according to claim 1, when the first information comprises a coverage area identifier of a control node serving the sending end, in a case that a coverage range of one control node belongs to one geographical zone, before the sending first information to a receiving end, further
25 comprising:

receiving information about a coverage area identifier of a control node that is sent by the control node by using second information.

9. The information sending method according to claim 1, when the first information comprises a coverage area identifier of a control node serving the
30 sending end, in a case that there are at least two geographical zones within a

coverage range of one control node, before the sending first information to a receiving end, further comprising:

receiving a division rule of geographical zones within coverage of the control node and a division rule of geographical zones within coverage of each of neighboring control nodes, wherein the division rules are sent by using second information by the control node.

10. The information sending method according to claim 1, wherein the first information further comprises at least one of the following:

a correspondence between side lengths of geographical zones and communication ranges,

a geographical zone division rule, and

a coverage area identifier of a control node serving the sending end.

11. An information receiving method, applied to a receiving end and comprising:

receiving first information sent by a sending end; wherein

the first information is used to assist the receiving end in determining whether to perform hybrid automatic repeat request (HARQ) feedback; and

the first information comprises a communication range indicator and a geographical zone identifier of the sending end; and

when there is at least one communication range for a multiplexed service packet in one transport block, the communication range indicator is used for indicating a maximum value of the at least one communication range;

wherein the information receiving method further comprises:

determining whether to perform the HARQ feedback according to the first information.

12. The information receiving method according to claim 11, wherein

the communication range indicator is used for indicating at least one of the following:

a layer index of a geographical zone adjacent to a geographical zone in which the sending end is located;

a layer index of a geographical zone covered by a control node, wherein the geographical zone is adjacent to a geographical zone that is covered by the control node and in which the sending end is located;

a geographical distance between the sending end and the receiving end; and

5 a relationship between a geographical zone identifier of the sending end and that of the receiving end.

13. The information receiving method according to claim 11 or 12, wherein the first information further comprises: auxiliary indication information within a communication range, wherein the auxiliary indication information is used for
10 determining at least one target zone within the communication range; and/or

the first information further comprises at least one of:

a correspondence between side lengths of geographical zones and communication ranges,

a geographical zone division rule, and

15 a coverage area identifier of a control node serving the sending end.

14. The information receiving method according to claim 11, after the receiving first information sent by a sending end, further comprising:

determining a geographical zone identifier of the receiving end according to a target division rule of geographical zone;

20 or,

when the first information comprises a correspondence between side lengths of geographical zones and communication ranges and a geographical zone division rule;

or when the first information comprises the correspondence between side lengths of geographical zones and communication ranges, the geographical zone division rule,

25 and auxiliary indication information within a communication range, after the receiving first information sent by a sending end, further comprising:

determining a geographical zone identifier of the receiving end according to the geographical zone division rule.

15. The information receiving method according to claim 11, wherein after the receiving first information sent by a sending end, the information receiving method further comprises:

5 determining, based on the geographical zone identifier of the sending end and the communication range indicator, whether the receiving end is located within a range indicated by the communication range indicator; and

if the receiving end is located within the range indicated by the communication range indicator, performing HARQ feedback.

16. The information receiving method according to claim 11, wherein when the first information comprises auxiliary indication information within a communication range, after the receiving first information sent by a sending end, the information receiving method further comprises:

15 determining, based on the geographical zone identifier of the sending end and the communication range indicator, whether the receiving end is located within a range indicated by the communication range indicator;

if the receiving end is located within the range indicated by the communication range indicator, determining, based on the auxiliary indication information within the communication range, whether the receiving end is located within a range indicated by the auxiliary indication information within the communication range; and

20 if the receiving end is located within the range indicated by the auxiliary indication information within the communication range, performing HARQ feedback.

17. The information receiving method according to claim 15 or 16, wherein when the communication range indicator is used for indicating a geographical distance between the sending end and the receiving end, the determining, based on the geographical zone identifier of the sending end and the communication range indicator, whether the receiving end is located within a range indicated by the communication range indicator comprises one of the following:

30 determining a first distance and a second distance based on positioning information of the receiving end and the geographical zone identifier of the sending

end, wherein if the first distance is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator, or if the second distance is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator, or if an average value of the first distance and the second distance is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator, wherein the first distance is greater than the second distance;

obtaining a first target distance based on the positioning information of the receiving end and a first reference point of the geographical zone in which the sending end is located, wherein if the first target distance is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator;

obtaining a second target distance based on a second reference point of a geographical zone in which the receiving end is located and a third reference point of the geographical zone in which the sending end is located, wherein if the second target distance is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator; and

obtaining a first reference value based on a geographical zone identifier of the receiving end and the geographical zone identifier of the sending end, wherein if the first reference value is less than the geographical distance between the sending end and the receiving end, the receiving end is located within the range indicated by the communication range indicator;

or,

when the communication range indicator is used for indicating a relationship between the geographical zone identifier of the sending end and that of the receiving end, the determining, based on the geographical zone identifier of the sending end and the communication range indicator, whether the receiving end is located within a

range indicated by the communication range indicator comprises one of the following:

when the relationship between the geographical zone identifier of the sending end and that of the receiving end is a difference threshold for the geographical zone identifiers, if an absolute value of a difference between the geographical zone identifier of the sending end and that of the receiving end is less than the difference threshold, the receiving end is located within the range indicated by the communication range indicator; and

when the relationship between the geographical zone identifier of the sending end and that of the receiving end is a first threshold obtained through a modular operation on geographical zone identifiers, and if a result of a modular operation on the geographical zone identifiers of the sending end and the receiving end meets a requirement of the first threshold, the receiving end is located within the range indicated by the communication range indicator.

18. A terminal, wherein the terminal is a sending end and comprises:

a first sending module, configured to send first information to a receiving end, wherein

the first information is used to assist the receiving end in determining whether to perform hybrid automatic repeat request (HARQ) feedback; and

the first information comprises a communication range indicator and a geographical zone identifier of the sending end; and

when there is at least one communication range for a multiplexed service packet in one transport block, the communication range indicator is used for indicating a maximum value of the at least one communication range.

19. A terminal, wherein the terminal is a receiving end and comprises:

a first receiving module, configured to receive first information sent by a sending end; wherein

the first information is used to assist the receiving end in determining whether to perform hybrid automatic repeat request (HARQ) feedback; and

the first information comprises a communication range indicator and a geographical zone identifier of the sending end; and

when there is at least one communication range for a multiplexed service packet in one transport block, the communication range indicator is used for indicating a maximum value of the at least one communication range.

20. A computer-readable storage medium, wherein a computer program is stored in the computer-readable storage medium, and when the computer program is executed by a processor, the steps of the information sending method according to any one of claims 1 to 10 are implemented, or the steps of the information receiving method according to any one of claims 11 to 17 are implemented.