[7] According to the agreements, in step 1, when the ratio of identified candidate resource to the total number of resources in a resource selection window, is less than X%, all configured thresholds are increased by Y dB and the resource identification procedure is repeated. The value and the configurability of X is for further study, with at least one value of X is 20. Y is 3. Other conditions to stop reference signal received power (RSRP) are also for further study.

[8] However, there has been no discussion on communication apparatuses and methods for Mode 2 resource (re-)selection for packet delay budget limited scenario, for example, when $T2_{min}$ > remaining PDB.

[9] There is thus a need for communication apparatuses and methods that provide feasible technical solutions for Mode 2 resource (re-)selection for PDB-limited scenario. Furthermore, other desirable features and characteristics will become apparent from the subsequent detailed description and the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

SUMMARY

[10] This disclosure presents a non-limiting example which facilitates providing communication apparatuses and methods for Mode 2 resource (re-)selection for PDB-limited scenario.

[11] In one example, there is provided a communication apparatus comprising: circuitry which, in operation, determines a candidate resource ratio from a plurality of candidate resource ratios, wherein the candidate resource ratio is different between a first priority value and a second priority value, and identifies a plurality of candidate resources based on the candidate resource ratio; and a transmitter, which, in operation, transmits a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the plurality of candidate resources.

[12] In another example, there is provided a communication method comprising: determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the candidate resource ratio is different between a first priority value and a second priority value; identifying a plurality of candidate resources based on the candidate resource ratio; and transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the plurality of candidate resources.

[12a] In another example, the present disclosure refers to an integrated circuit comprising: circuitry, which, in operation, controls: determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the candidate resource ratio is different between a first priority value and a second priority value; and identifying a plurality of candidate resources based on the candidate resource ratio; and transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the plurality of candidate resources.

[12b] In an aspect, the present disclosure refers to a communication apparatus comprising:

circuitry, which, in operation:

determines a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value, and

identifies a plurality of candidate resources based on the determined candidate resource ratio; and

a transmitter, which, in operation, transmits a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources., wherein,

for a case with the first priority value,

the determining the candidate resource ratio comprises determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources comprises multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio comprises determining a second candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources comprises multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

[12c] In an aspect, the present disclosure refers to a communication method comprising:

determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value;

identifying a plurality of candidate resources based on the determined candidate resource ratio; and

transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources, wherein

for a case with the first priority value,

the determining the candidate resource ratio includes determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio includes determining a second candidate resource ratio from the plurality of candidate resource ratios, and the identifying the plurality of candidate resources includes multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

[12d] In an aspect, the present disclosure refers to an integrated circuit comprising:

circuitry, which, in operation, controls:

determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value;

identifying a plurality of candidate resources based on the determined candidate resource ratio; and

transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources, wherein

for a case with the first priority value,

the determining the candidate resource ratio includes determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio includes determining a second candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

Claims

1. A communication apparatus comprising:

circuitry, which, in operation:

determines a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value, and

identifies a plurality of candidate resources based on the determined candidate resource ratio; and

a transmitter, which, in operation, transmits a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources, wherein,

for a case with the first priority value,

the determining the candidate resource ratio comprises determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources comprises multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio comprises determining a second candidate resource ratio from the plurality of candidate resource ratios, and the identifying the plurality of candidate resources comprises multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

2. The communication apparatus of claim 1, wherein the plurality of candidate resources are determined from an initial set of candidate resources based on the candidate resource ratio.

3. The communication apparatus of claim 1, wherein the plurality of candidate resource ratios include a ratio related to 20%.

4. The communication apparatus of claim 1, wherein the candidate resource ratio is configured for the communication apparatus.

5. A communication method comprising:

determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value;

identifying a plurality of candidate resources based on the determined candidate resource ratio; and

transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources, wherein

for a case with the first priority value,

the determining the candidate resource ratio includes determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio includes determining a second candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

6. The communication method of claim 5, wherein the plurality of candidate resources are determined from an initial set of candidate resources based on the candidate resource ratio.

7. The communication method of claim 5, wherein the plurality of candidate resource ratios include a ratio related to 20%.

8. The communication method of claim 5, wherein the candidate resource ratio is configured for a communication apparatus implementing the communication method.

9. An integrated circuit comprising:

circuitry, which, in operation, controls:

determining a candidate resource ratio from a plurality of candidate resource ratios, wherein the determined candidate resource ratio is different between a first priority value and a second priority value different from the first priority value;

identifying a plurality of candidate resources based on the determined candidate resource ratio; and

transmitting a Physical Sidelink Shared Channel (PSSCH) on at least one resource selected from the identified plurality of candidate resources, wherein

for a case with the first priority value,

the determining the candidate resource ratio includes determining a first candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined first candidate resource ratio by a total number of candidate resources in the case with the first priority value; and

for a case with the second priority value,

the determining the candidate resource ratio includes determining a second candidate resource ratio from the plurality of candidate resource ratios, and

the identifying the plurality of candidate resources includes multiplying the determined second candidate resource ratio by a total number of candidate resources in the case with the second priority value.

10. The integrated circuit of claim 9, wherein the plurality of candidate resources are identified based on the candidate resource ratio and a Reference Signal Received Power (RSRP) threshold.

11. The communication method of claim 5, wherein the plurality of candidate resources are identified based on the candidate resource ratio and a Reference Signal Received Power (RSRP) threshold.

12. The communication apparatus of claim 1, wherein the plurality of candidate resources are identified based on the candidate resource ratio and a Reference Signal Received Power (RSRP) threshold.

13. The communication apparatus of claim 1, wherein,

in the first case, the identifying the plurality of candidate resources comprises comparing a first number of candidate resources with a result of the multiplying of the determined first candidate resource ratio by the total number of candidate resources in the case with the first priority value; and

in the second case, the identifying the plurality of candidate resources comprises comparing a second number of candidate resources with a result of the multiplying of the determined second candidate resource ratio by the total number of candidate resources in the case with the second priority value.

14. The communication method of claim 5, wherein,

in the first case, the identifying the plurality of candidate resources comprises comparing a first number of candidate resources with a result of the multiplying of the determined first candidate resource ratio by the total number of candidate resources in the case with the first priority value; and

in the second case, the identifying the plurality of candidate resources comprises comparing a second number of candidate resources with a result of the multiplying of the determined second candidate resource ratio by the total number of candidate resources in the case with the second priority value.

15. The integrated circuit of claim 9, wherein,

in the first case, the identifying the plurality of candidate resources comprises comparing a first number of candidate resources with a result of the multiplying of the determined first candidate resource ratio by the total number of candidate resources in the case with the first priority value; and

in the second case, the identifying the plurality of candidate resources comprises comparing a second number of candidate resources with a result of the multiplying of the determined second candidate resource ratio by the total number of candidate resources in the case with the second priority value.