[6] the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

SUMMARY

[7] Non-limiting and exemplary example facilitates providing communication apparatuses and methods for selection and sensing windows for NR sidelink UEs with partial sensing.

[8] According to a first example of the present disclosure, there is provided a communication apparatus comprising: circuitry, which in operation, determines a first plurality of time resources for resource selection, a second plurality of time resources for resource sensing, and a first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing, and selects a portion of the first subset of time resources; and a transmitter, which in operation, transmits a SL signal in the selected portion of the first subset of time resources.

[7a] In one aspect, the present disclosure refers to a communication apparatus comprising a receiver, which in operation, receives control information relating to a first subset of time resources used for a full sensing, circuitry, which in operation, determines

- a first plurality of time resources for resource selection,
- a second plurality of time resources for resource sensing,
- the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing, and
- a second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing; and
- selects a portion of the first subset of time resources; and

a transmitter, which in operation, transmits a sidelink, SL, signal in the selected portion of the first subset of time resources,
characterized in that

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[9] According to a second example of the present disclosure, there is provided a communication method comprising: determining a first plurality of time resources for resource selection, a second plurality of time resources for resource sensing, and a first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing; selecting a portion of the first subset of time resources; and transmitting a sidelink (SL) signal in the selected portion of the first subset of time resources.

[8a] In another aspect, the present disclosure refers to a communication method comprising, receiving control information relating to a first subset of time resources used for a full sensing, and determining:

- a first plurality of time resources for resource selection,
- a second plurality of time resources for resource sensing,
- the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing; and
- second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing;

selecting a portion of the first subset of time resources; and

transmitting a sidelink, SL, signal in the selected portion of the first subset of time resources,

the method being characterized in that

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[8b] In yet another aspect, the present disclosure refers to a base station comprising, circuitry, which in operation, generates control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing, and a transmitter, which in operation, transmits the control information,

characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[8c] In yet another aspect, the present disclosure refers to a communication method comprising, generating control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing; and transmitting the control information,

characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[8d] In yet another aspect, the present disclosure refers to an integrated circuit comprising, reception circuitry, which in operation, controls of receiving control information relating to a first subset of time resources used for a full sensing, and performing circuitry, which in operation, determines

- a first plurality of time resources for resource selection,
- a second plurality of time resources for resource sensing,
- the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing, and

• a second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing; and

- selects a portion of the first subset of time resources; and

transmission circuity, which in operation, transmits a sidelink, SL, signal in the selected portion of the first subset of time resources,

characterized in that

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[8e] In yet another aspect, the present disclosure refers to an integrated circuit comprising, generation circuitry, which in operation, controls of generating control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing, and transmission circuitry, which in operation, controls of transmitting the control information, characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

[10] It should be noted that general or specific examples may be implemented as a system, a method, an integrated circuit, a computer program, a storage medium, or any selective combination thereof.

[11] Additional benefits and advantages of the disclosed examples will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various examples and features of the specification and drawings, which need not all be provided in order to obtain one or more of such benefits and/or advantages.

CLAIMS

1. A communication apparatus comprising:

a receiver, which in operation, receives control information relating to a first subset of time resources used for a full sensing;

circuitry, which in operation,

- determines
  - a first plurality of time resources for resource selection,
  - a second plurality of time resources for resource sensing,
  - the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing, and
  - a second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing; and
- selects a portion of the first subset of time resources; and

a transmitter, which in operation, transmits a sidelink, SL, signal in the selected portion of the first subset of time resources,

characterized in that

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

2. The communication apparatus of claim 1, wherein the first subset of time resources is discrete with a periodicity.

3. The communication apparatus of claim 1, wherein the first subset of time resources is every X slots from a reference slot.

4. The communication apparatus of claim 1, wherein the first subset of time resources is different from another communication apparatus.

5. The communication apparatus of claim 1, wherein the control information is transmitted by a RRC (radio resource control) signaling.

6. A communication method comprising:

receiving control information relating to a first subset of time resources used for a full sensing; and

determining:

- a first plurality of time resources for resource selection,
- a second plurality of time resources for resource sensing,
- the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing; and
- second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing;

selecting a portion of the first subset of time resources; and

transmitting a sidelink, SL, signal in the selected portion of the first subset of time resources,

the method being **characterized in that**

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

7. The communication method of claim 6, wherein the first subset of time resources is discrete with a periodicity.

8. The communication method of claim 6, wherein the first subset of time resources is every X slots from a reference slot.

9. The communication method of claim 6, wherein the first subset of time resources is different from another communication apparatus.

10. The communication method of claim 6, wherein the control information is transmitted by a RRC (radio resource control) signaling.

11. A base station comprising:

circuitry, which in operation, generates control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing; and

a transmitter, which in operation, transmits the control information,

characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

12. The base station of claim 11, wherein the first subset of time resources is discrete with a periodicity.

13. The base station of claim 11, wherein the first subset of time resources is every X slots from a reference slot.

14. The base station of claim 11, wherein the first subset of time resources is different from another communication apparatus.

15. The base station of claim 11, wherein the control information is transmitted by a RRC (radio resource control) signaling.

16. A communication method comprising:

generating control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing; and

transmitting the control information,

characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

17. The communication method of claim 16, wherein the first subset of time resources is discrete with a periodicity.

18. The communication method of claim 16, wherein the first subset of time resources is every X slots from a reference slot.

19. The communication method of claim 16, wherein the first subset of time resources is different from another communication apparatus.

20. The communication method of claim 16, wherein the control information is transmitted by a RRC (radio resource control) signaling.

21. An integrated circuit comprising:

reception circuitry, which in operation, controls of receiving control information relating to a first subset of time resources used for a full sensing; and

performing circuitry, which in operation,

- determines
    - a first plurality of time resources for resource selection,
    - a second plurality of time resources for resource sensing,
    - the first subset of time resources from the first plurality of time resources, the first subset of time resources being a selection window for partial sensing, and
    - a second subset of time resources from the second plurality of time resources, the second subset of time resources being a sensing window for partial sensing; and
- selects a portion of the first subset of time resources; and

transmission circuity, which in operation, transmits a sidelink, SL, signal in the selected portion of the first subset of time resources,

characterized in that

the first subset of time resources and/or the second subset of time resources of the communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.

22. An integrated circuit comprising:

generation circuitry, which in operation, controls of generating control information relating to a first subset of time resources used for a full sensing, the first subset being used for a partial sensing, and relating to a second subset of time resources being a sensing window for partial sensing; and

transmission circuitry, which in operation, controls of transmitting the control information,

characterized in that

the first subset of time resources and/or the second subset of time resources of a communication apparatus are different from that of another communication apparatus, based on at least one of a UEID, a value indicated by a base station, a priority, a congestion level, a channel busy ratio / change request, CBR/CR, and UE type of the communication apparatus and/or the another communication apparatus.