

CLAIMS

1. A method for informing available resource for PDSCH, comprising:

signaling , by a base station to a user equipment, information about the available resource for Physical Downlink Shared Channel (PDSCH) in a scheduling unit according to a reserved
5 resource allocation of the scheduling unit;

wherein the reserved resource allocation of the scheduling unit indicates in frequency domain one or more resource sets and indicates in time domain a part of Orthogonal Frequency Division Multiplexing (OFDM) symbols within the one or more resource sets of the scheduling unit as a reserved resource set, and the information about the available resource for PDSCH in the
10 scheduling unit includes information representing the reserved resource allocation of the scheduling unit, wherein the reserved resource set would not to be used for transmitting the PDSCH;

wherein signaling the information about the available resource for PDSCH in the scheduling unit comprises:

15 signaling the information about the available resource for PDSCH in the scheduling unit by using one of a dynamic common control channel, a dynamic UE-specific control channel and a semi-static higher layer signaling; or

signaling the information about the available resource for PDSCH in the scheduling unit by using both the semi-static higher layer signaling and one of the dynamic common control channel
20 and the dynamic UE-specific control channel; or

signaling the information about the available resource for PDSCH in the scheduling unit by using both the dynamic common control channel and the dynamic UE-specific control channel.

2. The method according to 1, further comprising:

specifying a default configuration for indicating the available resource for PDSCH within a
25 frequency region having no reserved resource set allocated therein; and
sending the default configuration to the user equipment.

3. The method according to claim 1 or 2, wherein the reserved resource set is a control resource set configured for the user equipment.

4. The method according to claim 1, wherein the signaling by the base station is able to be
30 realized using at least one of following three options:

a dynamic common control channel;

a dynamic UE-specific control channel; and
a semi-static higher layer signaling.

5. The method according to claim 4, wherein, the information about the available resource for PDSCH is able to be signaled using one or a combination of the three options.

5 6. The method according to claim 5, wherein, for a cross-slot scheduling or a semi-persistent scheduling, the information about the available resource for PDSCH is signaled using the semi-static higher layer signaling and/or the dynamic common control channel.

7. The method according to any of claims 1-6, wherein the information representing the reserved resource allocation of the scheduling unit is a bitmap of 14 bits.

10 8. The method according to any of claims 1-7, wherein the available resource is for allocated Physical Resource Blocks.

9. A method for determining available resource for PDSCH, comprising:

receiving, by the user equipment, information about the available resource for PDSCH in a scheduling unit, wherein the information about the available resource for Physical Downlink
15 Shared Channel (PDSCH) in the scheduling unit includes information representing a reserved resource allocation of the scheduling unit, wherein the reserved resource allocation of the scheduling unit indicates in frequency domain one or more resource sets and indicates in time domain a part of Orthogonal Frequency Division Multiplexing (OFDM) symbols within the one or more resource sets of the scheduling unit as a reserved resource set, the reserved resource set
20 would not to be used for transmitting the PDSCH; and

determining, by the user equipment, the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit;

wherein determining by the user equipment the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the
25 scheduling unit comprises:

when the information about the available resource for PDSCH in the scheduling unit is received from a base station using one of a dynamic common control channel, a dynamic UE-specific control channel and a semi-static higher layer signaling, determining the available resource for PDSCH in the scheduling unit according to the information about the available
30 resource for PDSCH in the scheduling unit; or

when the information about the available resource for PDSCH in the scheduling unit is

received from the based station using both the semi-static higher layer signaling and one of the dynamic common control channel and the dynamic UE-specific control channel, determining the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit latest received using the one of the dynamic
5 common control channel and the dynamic UE-specific control channel after determining candidate reserved resource allocation in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit received using the semi-static higher layer signaling; or

when the information about the available resource for PDSCH in the scheduling unit is received from the based station using both the dynamic common control channel and the dynamic
10 UE-specific control channel, determining the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit received using the dynamic UE-specific control channel.

10. The method according to claim 9, wherein the information representing the reserved resource allocation of the scheduling unit is a bitmap of 14 bits.

15 11. The method according to claim 9, wherein the available resource is for allocated Physical Resource Blocks.

12. A base station, comprising:

a processor;

a memory for storing instructions executable by the processor;

20 in which, the processor is configured to:

signal, to a user equipment, information about available resource for Physical Downlink Shared Channel (PDSCH) in a scheduling unit according to a reserved resource allocation of the scheduling unit;

wherein the reserved resource allocation of the scheduling unit indicates in frequency domain
25 one or more resource sets and indicates in time domain a part of Orthogonal Frequency Division Multiplexing (OFDM) symbols within the one or more resource sets of the scheduling unit as a reserved resource set, and the information about the available resource for PDSCH in the scheduling unit includes information representing the reserved resource allocation of the scheduling unit, wherein the reserved resource set would not to be used for transmitting the
30 PDSCH ;

wherein the processor is configured to signal, to the user equipment, the information about

the available resource for PDSCH in the scheduling unit in the following way:

signaling the information about the available resource for PDSCH in the scheduling unit by using one of a dynamic common control channel, a dynamic UE-specific control channel and a semi-static higher layer signaling; or

5 signaling the information about the available resource for PDSCH in the scheduling unit by using both the semi-static higher layer signaling and one of the dynamic common control channel and the dynamic UE-specific control channel; or

signaling the information about the available resource for PDSCH in the scheduling unit by using both the dynamic common control channel and the dynamic UE-specific control channel.

10 13. The base station according to claim 12, wherein the processor is configured to:

specify a default configuration for indicating the available resource for PDSCH within a frequency region having no reserved resource set allocated therein; and

send the default configuration to the user equipment.

15 14. The base station according to claim 12, wherein the reserved resource set is a control resource set configured for the user equipment.

15. The base station according to claim 12, wherein the processor is configured to signal the information by using at least one of the following three options:

a dynamic common control channel;

a dynamic UE-specific control channel; and

20 a semi-static higher layer signaling.

16. The base station according to claim 15, wherein the processor is configured to signal the information about the available resource for PDSCH by using one or a combination of the three options.

25 17. The base station according to claim 16, wherein the processor is configured to, for a cross-slot scheduling or a semi-persistent scheduling, signal the information about the available resource for PDSCH by using at least one of the semi-static higher layer signaling and the dynamic common control channel.

18. The base station according to claim 12, wherein the information representing the reserved resource allocation of the scheduling unit is a bitmap of 14 bits.

30 19. The base station according to claim 12, wherein the scheduling unit is a slot or a subframe.

20. The base station according to claim 12, wherein the available resource is for a particular resource set region or allocated Physical Resource Blocks.

21. The base station according to claim 12, wherein the reserved resource set is a control resource set configured for the user equipment.

5 22. A user equipment, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to:

receive information about available resource for Physical Downlink Shared Channel (PDSCH)

10 in a scheduling unit, wherein the information about the available resource for PDSCH in the scheduling unit includes information representing a reserved resource allocation of the scheduling unit, wherein the reserved resource allocation of the scheduling unit indicates in frequency domain one or more resource sets and indicates in time domain a part of Orthogonal Frequency Division Multiplexing (OFDM) symbols within the one or more resource sets of the scheduling unit as a
15 reserved resource set, the reserved resource set would not to be used for transmitting the PDSCH; and

determine the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit;

when the information about the available resource for PDSCH in the scheduling unit is
20 received from a base station using one of a dynamic common control channel, a dynamic UE-specific control channel and a semi-static higher layer signaling, determine the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit; or

when the information about the available resource for PDSCH in the scheduling unit is
25 received from the based station using both the semi-static higher layer signaling and one of the dynamic common control channel and the dynamic UE-specific control channel, determine the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit latest received using the one of the dynamic common control channel and the dynamic UE-specific control channel after determining candidate
30 reserved resource allocation in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit received using the semi-static higher layer signaling; or

when the information about the available resource for PDSCH in the scheduling unit is received from the based station using both the dynamic common control channel and the dynamic UE-specific control channel, determine the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit received using the dynamic UE-specific control channel.

23. The user equipment according to claim 22, wherein the processor is configured to:

receive a default configuration, wherein the default configuration is configured to indicate the available resource for PDSCH within a frequency region having no reserved resource set allocated therein; and

determine the available resource for PDSCH in the scheduling unit according to the information about the available resource for PDSCH in the scheduling unit and the default configuration.

24. The user equipment according to claim 23, wherein the available resource is for a particular resource set region or allocated Physical Resource Blocks.

25. The user equipment according to claim 22, wherein the information representing the reserved resource allocation of the scheduling unit is a bitmap of 14 bits.

26. The user equipment according to claim 22, wherein the scheduling unit is a slot or a subframe.