

User equipment and base station

BACKGROUND

1. Technical Field

- 5 The present disclosure relates to transmission and reception of signals in a communication system. In particular, the present disclosure relates to methods and apparatuses for such transmission and reception.

2. Description of the Related Art

- 10 The 3rd Generation Partnership Project (3GPP) works at technical specifications for the next generation cellular technology, which is also called fifth generation (5G) including “New Radio” (NR) radio access technology (RAT), which operates in frequency ranges up to 100 GHz. The NR is a follower of the technology represented by Long Term Evolution (LTE) and LTE Advanced (LTE-A).
- 15 For systems like LTE, LTE-A, and NR, further modifications and options may facilitate efficient operation of the communication system as well as particular devices pertaining to the system.

SUMMARY

- One non-limiting and exemplary example facilitates enabling selective cancellation of specific
20 uplink transmissions in case of collision with another uplink transmission.

- In an aspect, the techniques disclosed herein feature a user equipment, UE, comprising a transceiver which, in operation, receives an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a
25 particular transmission, and circuitry which, in operation, compares a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted to the UE prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, wherein the

transceiver, in operation, performs the first uplink transmission based on a result of the comparison.

In another aspect, the present disclosure refers to a base station, comprising circuitry which, in operation, grants a first uplink transmission prior to scheduling a second uplink transmission
5 allocated to resources overlapping with resources allocated to the first uplink transmission, generates an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission, and compares a priority level of the first uplink transmission with the indicated priority level to be
10 enforced, and a transceiver which, in operation, transmits the indication and performs reception of the first uplink transmission based on a result of the comparison.

In yet another aspect, the present disclosure refers to an uplink transmission method, comprising, receiving an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be
15 performed in a case of overlapping resources and is not associated with a particular transmission, comparing a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, and performing the first uplink transmission based on a result of the
20 comparison.

In yet another aspect, the present disclosure refers to an uplink reception method, comprising, granting a first uplink transmission prior to scheduling a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, generating an indication indicating a priority level to be enforced, wherein the priority level to be enforced
25 is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission, comparing a priority level of the first uplink transmission with the indicated priority level to be enforced, transmitting the indication; and performing reception of the first uplink transmission based on a result of the comparison.

30 In yet another aspect, the present disclosure refers to an integrated circuit, which in operation, controls a process of an uplink transmission of a user equipment, the process comprising, receiving an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission, comparing

a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, and performing the first uplink transmission based on a result of the comparison.

- 5 In yet another aspect, the present disclosure refers to an integrated circuit, which in operation, controls a process of an uplink reception of a base station, the process comprising, granting a first uplink transmission prior to scheduling a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, generating an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority
- 10 level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission, comparing a priority level of the first uplink transmission with the indicated priority level to be enforced, transmitting the indication, and performing reception of the first uplink transmission based on a result of the comparison.
- 15 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.

CLAIMS

- 1 A user equipment, UE, comprising:
- 5 a transceiver which, in operation, receives an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission; and
- 10 circuitry which, in operation, compares a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted to the UE prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission,
- wherein the transceiver, in operation, performs the first uplink transmission based on a result of the comparison.
- 15 2. The UE according to claim 1, wherein the transceiver, in operation, receives group-common Downlink Control Information common to a plurality of UEs including the indication indicating the priority level to be enforced.
3. The UE according to claim 1 or 2, wherein
- 20 the circuitry, in operation, compares an index of the priority level of the first uplink transmission or of a transmission type representing the priority level of the first uplink transmission with the indicated priority level to be enforced.
4. The UE according to any of claims 1 to 3, a mapping of a plurality of indexes to a plurality of transmission types including the transmission type of the first uplink transmission being specific to the UE or to a subset of UEs receiving the indication, the subset including said UE.
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5. The UE according to claim 1 or 3, a mapping of a plurality of indexes to a plurality of priority levels including the priority level of the first uplink transmission and a priority level of the second uplink transmission being common to UEs receiving the indication.
- 5 6. The UE according to claim 5, wherein, in the mapping of the plurality of indexes to the plurality of priority levels, each index is mapped to a priority level in a one-to-one correspondence.
- 10 7. The UE according to claim 5, wherein, in the mapping of the plurality of indexes to the plurality of priority levels, each index is mapped to a range of priority levels.
8. The UE according to any of claims 4 to 7, wherein the mapping of the plurality of indexes is configured via Radio Resource Control signaling.
- 15 9. The UE according to claims 5 to 7, wherein the mapping of the plurality of indexes to the plurality of priority levels is based on a total number of priority levels defined by standard.
- 20 10. The UE according to any of claims 4 to 9, wherein the priority level is defined by a transmission type.
11. The UE according to claim 3 or 9, wherein the transmission type includes at least one of a channel type, type of information to be transmitted, or service requirement.
- 25 12. The UE according to claim 1 or 2, wherein the circuitry comprises physical layer circuitry which in operation, receives from a Medium Access Control layer, information indicative of the priority level of the first uplink transmission.

13. A base station, comprising:

5 circuitry which, in operation, grants a first uplink transmission prior to scheduling a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission, generates an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission, and compares a priority level of the first uplink transmission with the indicated priority level to be enforced; and

10 a transceiver which, in operation, transmits the indication and performs reception of the first uplink transmission based on a result of the comparison.

14. An uplink transmission method, comprising:

15 receiving an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission;

20 comparing a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission; and

performing the first uplink transmission based on a result of the comparison.

15. An uplink reception method, comprising:

25 granting a first uplink transmission prior to scheduling a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission;

30 generating an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission;

comparing a priority level of the first uplink transmission with the indicated priority level to be enforced;

transmitting the indication; and

performing reception of the first uplink transmission based on a result of the comparison.

16. An integrated circuit, which in operation, controls a process of an uplink transmission of a user equipment, the process comprising:

receiving an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission;

comparing a priority level of a first uplink transmission with the indicated priority level to be enforced, the first uplink transmission being granted prior to scheduling of a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission; and

performing the first uplink transmission based on a result of the comparison.

17. An integrated circuit, which in operation, controls a process of an uplink reception of a base station, the process comprising:

granting a first uplink transmission prior to scheduling a second uplink transmission allocated to resources overlapping with resources allocated to the first uplink transmission;

generating an indication indicating a priority level to be enforced, wherein the priority level to be enforced is a priority level which is attributed to transmissions which should be performed in a case of overlapping resources and is not associated with a particular transmission;

comparing a priority level of the first uplink transmission with the indicated priority level to be enforced;

transmitting the indication; and

performing reception of the first uplink transmission based on a result of the comparison.