

CLAIMS

1. A wireless communications method, comprising:
sending, from a first radio terminal to a second radio terminal, a grant message to allow
5 transmission in a future time slot, wherein the future timeslot corresponds to resources of a
dummy shared channel in a first direction; and
scheduling one or more resources of a shared channel in a second direction with a
corresponding acknowledgement that overlaps in time with the dummy shared channel in the
first direction.
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2. A wireless communications method, comprising:
sending, from a first radio terminal to a second radio terminal, a grant to allow
transmission in a future time slot, wherein the future timeslot corresponds to resources of a non-
dummy shared channel in a first direction; and
15 forbidding the scheduling of one or more resources of a shared channel in a second
direction with a corresponding acknowledgement that overlaps in time with the non-dummy
shared channel in a first direction.
3. The method of claim 2, wherein a last message received at the second radio terminal is
20 the grant message.
4. A wireless communications method, comprising:
sending, from a first radio terminal to a second radio terminal, a grant message to allow
transmission in a future time slot, wherein the future timeslot corresponds to resources of a
25 dummy shared channel in a first direction;
sending one or more subsequent grants to schedule resources of a shared channel in a
second direction with an acknowledgement that overlaps in time with the dummy shared channel
in the first direction; and
receiving a feedback acknowledgement codebook with a number of bits determined by an
30 assignment indicator in a last sent grant.

5. A wireless communications method, comprising:

sending, from a first radio terminal to a second radio terminal, a grant message to allow transmission in a future time slot, wherein the future timeslot corresponds to resources of a

5 dummy shared channel in a first direction; and

receiving a feedback acknowledgement codebook with a number of bits determined by an assignment indicator in a last sent grant when the first radio terminal does not send one or more subsequent grants to schedule resources of the shared channel in a second direction with an acknowledgement that overlaps in time with the dummy shared channel in a first direction.

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6. The method of claim 5, wherein a last message received at the second radio terminal is the grant message.

7. A wireless communications method, comprising:

15 receiving, at a second radio terminal from a first radio terminal, a grant message to allow transmission in a future time slot, wherein the future timeslot corresponds to resources of a dummy shared channel in a first direction; and

receiving one or more resources of a shared channel in a second direction with corresponding acknowledgement that overlaps in time with the dummy shared channel in the
20 first direction.

8. The method of claim 1 or 7, wherein one or more intervening messages comprising one or more resources of the shared channel in the second direction are sent between the grant message and the corresponding acknowledgement.

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9. A wireless communications method, comprising:

receiving, at a first radio from to a second radio terminal, a grant to allow transmission in a future time slot, wherein the future timeslot corresponds to resources of a non-dummy shared channel in a first direction; and

failing to receive via one or more resources of a shared channel in a second direction with corresponding acknowledgement that overlaps in time with the non-dummy shared channel in a first direction.

5 10. A wireless communications method, comprising:

receiving, at a first radio terminal from a second radio terminal, a grant message to allow transmission in a future time slot, wherein the future timeslot corresponds to resources of a dummy shared channel in a first direction;

10 receiving one or more subsequent grants to schedule resources of a shared channel in a second direction with an acknowledgement that overlaps in time with the dummy shared channel in the first direction; and

sending feedback acknowledgement codebook with a number of bits determined by an assignment indicator in a last received grant.

15 11. The method of claim 1, 4, 7 or 10, wherein a last message received at the second radio terminal is a last scheduled resource of the shared channel in the second direction, or the grant message.

12. A wireless communications method, comprising:

20 receiving, at a first radio terminal from a second radio terminal, a grant message to allow transmission in a future time slot, wherein the future timeslot corresponds to resources of a dummy shared channel in a first direction; and

25 sending a feedback acknowledgement codebook with a number of bits determined by an assignment indicator in a last received grant when the second radio terminal does not receive one or more subsequent grants to schedule resources of the shared channel in a second direction with an acknowledgement that overlaps in time with the dummy shared channel in a first direction.

13. The method of claim 9 or 12, wherein a last message received at the second radio terminal is the grant message.

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14. A wireless communication apparatus, comprising a processor configured to implement a method recited in any one or more of claims 1 to 13.

5 15. A computer program product having code stored thereon, the code, when executed by a processor, causing the processor to implement a method recited in any one or more of claims 1 to 13.