

CLAIMS

What is claimed is:

1. A communication method, comprising:
transmitting from a base station to a mobile station a first message which includes
5 resource information corresponding to one or more resource pools, wherein the resource
information identifies at least one sub-frame and at least one resource block within the at least
one sub-frame,
transmitting to the mobile station an indicator of one or more designated resource pools
and designated resources from within the one or more designated resource pools such that the
10 mobile station is permitted to communicate with a wireless device in communication with the
mobile station via a wireless link using the one or more designated resources within the one or
more designated resource pools.
2. The method of claim 1, wherein the first message contains one or more identifiers in a
15 one-to-one correspondence with the one or more resource pools.
3. The method of claim 1, wherein the indicator is explicit.
4. The method of claim 1, wherein the indicator is implicit.
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5. The method of claim 3, wherein the explicit indicator further comprises a resource pool
index that identifies a resource pool from within the currently available resource pools
transmitted in the first message.
- 25 6. The method of claim 5, wherein the resource pool index is an information field within the
downlink control information (DCI).
7. The method of claim 4, wherein the implicit indicator mapping between the implicit
indicator and the corresponding resource pool is known.
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8. The method of claim 7, wherein the mapping between the implicit indicator and the corresponding resource pool is signaled via a message.
9. The method of claim 8, wherein the implicit indicator is performed by scrambling the
5 downlink control information (DCI) with a scrambling sequence.
10. The method of claim 9, wherein the scrambling sequence is based at least in part on a radio network temporary identifier (RNTI).
- 10 11. The method of claim 9, wherein the scrambling sequence is based at least in part on a scrambling sequence signaled via a message.
12. The method of claim 7, wherein the implicit indicator is based on the downlink control information (DCI) location within a frame.
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13. The method of claim 8, wherein the implicit indicator is based on the downlink control information (DCI) location within a frame.
14. The method of claim 12, wherein the mapping between the implicit indicator based on
20 downlink control information location within the frame satisfies the following relationship $i = s \text{ modulo } N$, wherein i is the corresponding resource pool index, s is the corresponding downlink control information location within the frame, wherein the frame includes K sub-frames, and N is a maximum number of resource pools supported.
- 25 15. A communication method, comprising:
receiving, at a mobile station, a first message that includes resource information corresponding to one or more resource pools, wherein the resource information identifies at least one sub-frame and at least one resource block within the at least one sub-frame,
receiving, at the mobile station, an indicator of one or more designated resource pools
30 and designated resources from within the one or more designated resource pools such that communications between the mobile station with a wireless device is permitted via a wireless

link between the mobile station and the wireless device using the one or more designated resources within the one or more designated resource pools.

16. The method of claim 15, wherein the first message contains one or more identifiers in a one-to-one correspondence with the one or more resource pools.

17. The method of claim 15, wherein the indicator is explicit.

18. The method of claim 15, wherein the indicator is implicit.

19. The method of claim 17, wherein the explicit indicator further comprises a resource pool index that identifies a resource pool from within the currently available resource pools received in the first message.

20. The method of claim 19, wherein the resource pool index is an information field within the downlink control information (DCI).

21. The method of claim 18, wherein the implicit indicator mapping between the implicit indicator and the corresponding resource pool is known.

22. The method of claim 21, wherein the mapping between the implicit indicator and the corresponding resource pool is signaled via a message.

23. The method of claim 22, wherein the implicit indicator is performed by scrambling the downlink control information (DCI) with a scrambling sequence.

24. The method of claim 23, wherein the scrambling sequence is based at least in part on a radio network temporary identifier (RNTI).

25. The method of claim 23, wherein the scrambling sequence is based at least in part on a scrambling sequence signaled via a message.

26. The method of claim 21, wherein the implicit indicator is based on the downlink control information location (DCI) within a frame.
- 5 27. The method of claim 22, wherein the implicit indicator is based on the downlink control information (DCI) location within a frame.
28. The method of claim 26, wherein the mapping between the implicit indicator based on downlink control information location within the frame satisfies the following relationship
10 $i = s \text{ modulo } N$, wherein i is the corresponding resource pool index, s is the corresponding downlink control information location within the frame, wherein the frame includes K sub-frames, and N is a maximum number of resource pools supported.
29. An apparatus for wireless communication that carries out the method of any of claims 1
15 to 28.
30. A non-transitory computer readable medium having code stored thereon, the code, when executed by a processor, causing the processor to implement a method recited in any of claims 1
20 to 28.