

CLAIMS

What is claimed is:

1. A method for wireless communication, comprising:
monitoring a control channel for downlink control information (DCI) from a base station;
identifying a DCI message in the control channel corresponding to a radio network temporary identifier (RNTI);
interpreting at least one bit field in the DCI message based at least in part on a type of control information included in the DCI message and the RNTI; and
determining an uplink or downlink transmission configuration for communicating with the base station based at least in part on interpreting the at least one bit field in the DCI message.
2. The method of claim 1, further comprising:
determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises paging information; and
interpreting the at least one bit field in the DCI message as a short message indicator.
3. The method of claim 2, wherein the short message indicator indicates whether the DCI message comprises a short paging message.
4. The method of claim 3, wherein the DCI message comprises paging scheduling information.
5. The method of claim 2, wherein the RNTI comprises a paging RNTI (P-RNTI).
6. The method of claim 1, further comprising:
determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises system information; and

interpreting the at least one bit field in the DCI message as a system information format indicator or a short system information indicator.

7. The method of claim 6, wherein the RNTI comprises a system information RNTI (SI-RNTI).

8. The method of claim 1, further comprising:
determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises random access information; and
interpreting the at least one bit field in the DCI message as a configuration for a Message 3 (Msg3) transmission.

9. The method of claim 8, wherein the configuration for the Msg3 transmission indicates whether to include a beam index in the Msg3 transmission.

10. The method of claim 8, wherein the beam index corresponds to a synchronization signal block index or a channel state information reference signal (CSI-RS) index.

11. The method of claim 8, wherein the RNTI comprises a random access RNTI (RA-RNTI).

12. The method of claim 1, further comprising:
identifying a first DCI message in the control channel corresponding to a first RNTI, wherein the first RNTI comprises a paging RNTI (P-RNTI);
interpreting at least one bit field in the first DCI message as a first indication;
identifying a second DCI message in the control channel corresponding to a cell RNTI (C-RNTI); and
interpreting at least one bit field in the second DCI message as a second indication.

13. The method of claim 12, further comprising:
determining a first type of control information included in the first DCI message based at least in part on the P-RNTI, wherein the first type of control information

included in the first DCI message comprises a short paging message or downlink paging scheduling information; and

determining a second type of control information included in the second DCI message based at least in part on the C-RNTI, wherein the second type of control information included in the second DCI message comprises a configuration for at least one of an uplink or downlink transmission.

14. The method of claim 12, wherein the second indication comprises a DCI format identifier, a transmit power control (TPC) command for scheduled physical uplink control channel (PUCCH), a PUCCH resource indicator, a physical downlink shared channel (PDSCH) to hybrid automatic repeat request (HARQ) feedback timing indicator, a new data indicator, a redundancy version indicator, or a HARQ process number.

15. The method of claim 1, wherein determining the type of control information included in the DCI message further comprises:
identifying resources used to transmit the DCI message; and
determining the type of control information included in the DCI message based at least in part on the resources used to transmit the DCI message.

16. The method of claim 1, wherein the at least one bit field in the DCI message provides a different indication from a respective bit field in another DCI message including another type of control information.

17. The method of claim 1, wherein interpreting the at least one bit field in the DCI message comprises:

interpreting the at least one bit field in the DCI message as a first indication when the RNTI comprises a first RNTI; and
interpreting the at least one bit field in the DCI message as a second indication when the RNTI comprises a second RNTI that is different from the first RNTI.

18. The method of claim 1, wherein the RNTI corresponding to the DCI message is used to successfully descramble cyclic redundancy check (CRC) bits attached to the DCI message.

19. A method for wireless communication, comprising:

identifying, at a base station, a first type of control information to transmit to a user equipment (UE) in a downlink control information (DCI) message;

generating the DCI message for transmitting the first type of control information;

utilizing at least one bit field in the DCI message to provide an indication corresponding to the first type of control information, wherein the indication provided by the at least one bit field is different from an indication provided by a respective bit field in another DCI message for a second type of control information; and

transmitting the DCI message to the UE, wherein the DCI message includes an uplink or downlink transmission configuration for communicating with the base station, based at least in part on the at least one bit field in the DCI message.

20. The method of claim 19, wherein the first type of control information comprises paging information, and wherein utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

utilizing the at least one bit field in the DCI message as a short message indicator.

21. The method of claim 20, wherein the short message indicator indicates whether the DCI message comprises a short paging message.

22. The method of claim 21, wherein the DCI message contains paging scheduling information.

23. The method of claim 20, wherein:
cyclic redundancy check (CRC) bits of the DCI message are scrambled using a paging RNTI (P-RNTI).

24. The method of claim 20, wherein the first type of control information comprises system information, and wherein utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

utilizing the at least one bit field in the DCI message as a system information format indicator or a short system information indicator.

25. The method of claim 24, wherein:
cyclic redundancy check (CRC) bits of the DCI message are scrambled using a system information RNTI (SI-RNTI).

26. The method of claim 20, wherein the first type of control information comprises random access information, and wherein utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

utilizing the at least one bit field in the DCI message to indicate a configuration for a Message 3 (Msg3) transmission.

27. The method of claim 26, wherein the configuration for the Msg3 transmission indicates whether the UE should transmit a beam index in the Msg3 transmission.

28. The method of claim 26, wherein the beam index corresponds to a synchronization signal block index or a channel state information reference signal (CSI-RS) index.

29. The method of claim 26, wherein:
cyclic redundancy check (CRC) bits of the DCI message are scrambled using a random access RNTI (RA-RNTI).

30. The method of claim 20, wherein the first type of control information comprises a grant, and wherein utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

utilizing the at least one bit field in the DCI message as a DCI format identifier, a transmit power control (TPC) command for scheduled physical uplink control channel (PUCCH), a PUCCH resource indicator, a physical downlink shared channel (PDSCH)-to-hybrid automatic repeat request (HARQ) feedback timing indicator, a new data indicator, a redundancy version indicator, or a HARQ process number.

31. The method of claim 30, wherein:
cyclic redundancy check (CRC) bits of the DCI message are scrambled using a cell RNTI (C-RNTI).

32. An apparatus for wireless communication, comprising:
means for monitoring a control channel for downlink control information (DCI) from a base station;
means for identifying a DCI message in the control channel corresponding to a radio network temporary identifier (RNTI);
means for interpreting at least one bit field in the DCI message based at least in part on a type of control information included in the DCI message and the RNTI; and
means for determining an uplink or downlink transmission configuration for communicating with the base station based at least in part on interpreting the at least one bit field in the DCI message.
33. The apparatus of claim 32, further comprising:
means for determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises paging information; and
means for interpreting the at least one bit field in the DCI message as a short message indicator.
34. The apparatus of claim 33, wherein the short message indicator indicates whether the DCI message comprises a short paging message.
35. The apparatus of claim 34, wherein the DCI message comprises paging scheduling information.
36. The apparatus of claim 33, wherein the RNTI comprises a paging RNTI (P-RNTI).
37. The apparatus of claim 32, further comprising:
means for determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises system information; and
means for interpreting the at least one bit field in the DCI message as a system information format indicator or a short system information indicator.

38. The apparatus of claim 37, wherein the RNTI comprises a system information RNTI (SI-RNTI).

39. The apparatus of claim 32, further comprising:
means for determining the type of control information included in the DCI message based at least in part on the RNTI, wherein the type of control information included in the DCI message comprises random access information; and
means for interpreting the at least one bit field in the DCI message as a configuration for a Message 3 (Msg3) transmission.

40. The apparatus of claim 39, wherein the configuration for the Msg3 transmission indicates whether to include a beam index in the Msg3 transmission.

41. The apparatus of claim 39, wherein the beam index corresponds to a synchronization signal block index or a channel state information reference signal (CSI-RS) index.

42. The apparatus of claim 39, wherein the RNTI comprises a random access RNTI (RA-RNTI).

43. The apparatus of claim 32, further comprising:
means for identifying a first DCI message in the control channel corresponding to a first RNTI, wherein the first RNTI comprises a paging RNTI (P-RNTI);
means for interpreting at least one bit field in the first DCI message as a first indication;
means for identifying a second DCI message in the control channel corresponding to a cell RNTI (C-RNTI); and
means for interpreting at least one bit field in the second DCI message as a second indication.

44. The apparatus of claim 43, further comprising:
means for determining a first type of control information included in the first DCI message based at least in part on the P-RNTI, wherein the first type of control information included in the first DCI message comprises a short paging message or downlink paging scheduling information; and

means for determining a second type of control information included in the second DCI message based at least in part on the C-RNTI, wherein the second type of control information included in the second DCI message comprises a configuration for at least one of an uplink or downlink transmission.

45. The apparatus of claim 43, wherein the second indication comprises a DCI format identifier, a transmit power control (TPC) command for scheduled physical uplink control channel (PUCCH), a PUCCH resource indicator, a physical downlink shared channel (PDSCH) to hybrid automatic repeat request (HARQ) feedback timing indicator, a new data indicator, a redundancy version indicator, or a HARQ process number.

46. The apparatus of claim 32, wherein the means for determining the type of control information included in the DCI message further comprises:

means for identifying resources used to transmit the DCI message; and

means for determining the type of control information included in the DCI message based at least in part on the resources used to transmit the DCI message.

47. The apparatus of claim 32, wherein the at least one bit field in the DCI message provides a different indication from a respective bit field in another DCI message including another type of control information.

48. The apparatus of claim 32, wherein the means for interpreting the at least one bit field in the DCI message comprises:

means for interpreting the at least one bit field in the DCI message as a first indication when the RNTI comprises a first RNTI; and

means for interpreting the at least one bit field in the DCI message as a second indication when the RNTI comprises a second RNTI that is different from the first RNTI.

49. The apparatus of claim 32, wherein the RNTI corresponding to the DCI message is used to successfully descramble cyclic redundancy check (CRC) bits attached to the DCI message.

50. An apparatus for wireless communication, comprising:

means for identifying, at a base station, a first type of control information to transmit to a user equipment (UE) in a downlink control information (DCI) message;

means for generating the DCI message for transmitting the first type of control information;

means for utilizing at least one bit field in the DCI message to provide an indication corresponding to the first type of control information, wherein the indication provided by the at least one bit field is different from an indication provided by a respective bit field in another DCI message for a second type of control information; and

means for transmitting the DCI message to the UE, wherein the DCI message includes an uplink or downlink transmission configuration for communicating with the base station, based at least in part on the at least one bit field in the DCI message.

51. The apparatus of claim 50, wherein the first type of control information comprises paging information, and wherein the means for utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

means for utilizing the at least one bit field in the DCI message as a short message indicator.

52. The apparatus of claim 51, wherein the short message indicator indicates whether the DCI message comprises a short paging message.

53. The apparatus of claim 52, wherein the DCI message contains paging scheduling information.

54. The apparatus of claim 51, wherein cyclic redundancy check (CRC) bits of the DCI message are scrambled using a paging RNTI (P-RNTI).

55. The apparatus of claim 51, wherein the first type of control information comprises system information, and wherein the means for utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

means for utilizing the at least one bit field in the DCI message as a system information format indicator or a short system information indicator.

56. The apparatus of claim 55, wherein cyclic redundancy check (CRC) bits of the DCI message are scrambled using a system information RNTI (SI-RNTI).

57. The apparatus of claim 51, wherein the first type of control information comprises random access information, and wherein the means for utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

means for utilizing the at least one bit field in the DCI message to indicate a configuration for a Message 3 (Msg3) transmission.

58. The apparatus of claim 57, wherein the configuration for the Msg3 transmission indicates whether the UE should transmit a beam index in the Msg3 transmission.

59. The apparatus of claim 57, wherein the beam index corresponds to a synchronization signal block index or a channel state information reference signal (CSI-RS) index.

60. The apparatus of claim 57, wherein cyclic redundancy check (CRC) bits of the DCI message are scrambled using a random access RNTI (RA-RNTI).

61. The apparatus of claim 51, wherein the first type of control information comprises a grant, and wherein the means for utilizing the at least one bit field in the DCI message to provide an indication corresponding to the first type of control information comprises:

means for utilizing the at least one bit field in the DCI message as a DCI format identifier, a transmit power control (TPC) command for scheduled physical uplink control channel (PUCCH), a PUCCH resource indicator, a physical downlink shared channel (PDSCH)-to-hybrid automatic repeat request (HARQ) feedback timing indicator, a new data indicator, a redundancy version indicator, or a HARQ process number.

62. The apparatus of claim 61, wherein cyclic redundancy check (CRC) bits of the DCI message are scrambled using a cell RNTI (C-RNTI).

63. An apparatus for wireless communication, comprising:
a processor,
memory in electronic communication with the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

- monitor a control channel for downlink control information (DCI) from a base station;
- identify a DCI message in the control channel corresponding to a radio network temporary identifier (RNTI);
- interpret at least one bit field in the DCI message based at least in part on a type of control information included in the DCI message and the RNTI; and
- determine an uplink or downlink transmission configuration for communicating with the base station based at least in part on interpreting the at least one bit field in the DCI message.

64. An apparatus for wireless communication, comprising:
a processor,
memory in electronic communication with the processor; and
instructions stored in the memory and executable by the processor to cause the apparatus to:

- identify, at a base station, a first type of control information to transmit to a user equipment (UE) in a downlink control information (DCI) message;
- generate the DCI message for transmitting the first type of control information;
- utilize at least one bit field in the DCI message to provide an indication corresponding to the first type of control information, wherein the indication provided by the at least one bit field is different from an indication provided by a respective bit field in another DCI message for a second type of control information; and
- transmit the DCI message to the UE, wherein the DCI message includes an uplink or downlink transmission configuration for communicating with the base station, based at least in part on the at least one bit field in the DCI message.

65. A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:
monitor a control channel for downlink control information (DCI) from a base station;

identify a DCI message in the control channel corresponding to a radio network temporary identifier (RNTI);

interpret at least one bit field in the DCI message based at least in part on a type of control information included in the DCI message and the RNTI; and

determine an uplink or downlink transmission configuration for communicating with the base station based at least in part on interpreting the at least one bit field in the DCI message.

66. A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:

identify, at a base station, a first type of control information to transmit to a user equipment (UE) in a downlink control information (DCI) message;

generate the DCI message for transmitting the first type of control information;

utilize at least one bit field in the DCI message to provide an indication corresponding to the first type of control information, wherein the indication provided by the at least one bit field is different from an indication provided by a respective bit field in another DCI message for a second type of control information; and

transmit the DCI message to the UE, wherein the DCI message includes an uplink or downlink transmission configuration for communicating with the base station, based at least in part on the at least one bit field in the DCI message.