CLAIMS

1. A method of communication, comprising: generating satellite handoff information that specifies a handoff time for a particular cell of a particular satellite; receiving a measurement message from a user terminal; modifying the satellite handoff information based on the measurement message; and sending the modified satellite handoff information to the user terminal.

2. The method of claim 1, wherein the generation of the satellite handoff information is based on capability information for the user terminal.

3. The method of claim 2, wherein the capability information indicates at least one of: whether the user terminal can sense multiple cells or whether the user terminal can sense multiple satellites.

4. The method of claim 2, wherein the capability information indicates at least one of: an inter-cell tune time for the user terminal or an inter-satellite tune time for the user terminal.

5. The method of claim 2, wherein: the generation of the satellite handoff information is based on location information for the user terminal; and the location information comprises a motion vector for the user terminal.

6. The method of claim 1, wherein the generation of the satellite handoff information is based on at least one of: ephemeris information, a restriction due to an incumbent system, or a satellite pointing error.

7. The method of claim 1, wherein the generation of the satellite handoff information is triggered based on at least one of: handoff of the user terminal to a different satellite or receipt of a measurement message from the user terminal.

8. The method of claim 1, further comprising: performing handoffs for the user terminal to different cells and at least one satellite based on the satellite handoff information.

9. The method of claim 8, wherein the handoffs involve a change of at least one of: a satellite access network (SAN) or a satellite network portal (SNP) antenna.

10. The method of claim 8, wherein the handoffs involve a change of at least one of: a satellite cell or a forward service link (FSL) frequency.

11. The method of claim 1, wherein the modification of the satellite handoff information comprises advancing handoff timing or delaying handoff timing.

12. The method of claim 1, further comprising: determining a measurement gap for measuring satellite signals; and sending information indicative of the measurement gap to the user terminal, wherein the measurement message comprises an indication of a measurement of signals from at least one satellite conducted during the measurement gap.

13. The method of claim 1, further comprising: receiving capability information from the user terminal; and selecting a handoff procedure for the user terminal based on the received capability information.

14. The method of claim 13, wherein: the capability information indicates whether the user terminal is dual sense capable; and the selection of the handoff procedure comprises enabling or disabling monitoring for a measurement message from the user terminal based on whether the user terminal is dual sense capable.

15. The method of claim 1, further comprising: determining a time of a handoff of the user terminal; and transferring at least one user queue prior to the handoff.

16. The method of claim 1, wherein the satellite handoff information comprises a table that includes a handoff activation time.

17. The method of claim 1, wherein the satellite handoff information comprises at least one tune-away time.

18. The method of claim 1, further comprising: receiving, from the user terminal, a message comprising user terminal paging area information.

19. The method of claim 1, further comprising: determining that a measurement gap is not needed for measuring satellite signals, wherein, as a result of the determination, the generation of the satellite handoff information comprises not including a tune-away time in the satellite handoff information.

20. The method of claim 1, wherein the handoff information is for at least one future handoff.

21. The method of claim 1, wherein the handoff information is for the next beam handoff and for at least one future satellite handoff.

22. The method of claim 1, wherein the generation of the satellite handoff information is based on a satellite beam pattern.

23. An apparatus for communication comprising: a memory; and a processor coupled to the memory, the processor and the memory configured to: generate satellite handoff information that specifies a handoff time for a particular cell of a particular satellite; receive a measurement message from a user terminal; modify the satellite handoff information based on the measurement message; and send the modified satellite handoff information to the user terminal.

24. The apparatus of claim 23, wherein the processor and the memory are further configured to: generate the satellite handoff information based on at least one of: capability information for the user terminal, location information for the user terminal, ephemeris information, a restriction due to an incumbent system, or a satellite pointing error.

25. The apparatus of claim 24, wherein the capability information indicates at least one of: whether the user terminal can sense multiple cells, whether the user terminal can sense multiple satellites, an inter-cell tune time for the user terminal, or an inter-satellite tune time for the user terminal.

26. The apparatus of claim 23, wherein the processor and the memory are further configured to: perform handoffs for the user terminal to different cells and at least one satellite based on the satellite handoff information.

27. The apparatus of claim 23, wherein, to modify the satellite handoff information, the processor and the memory are further configured to advance handoff timing or delay handoff timing.

28. The apparatus of claim 23, wherein the processor and the memory are further configured to: determine a measurement gap for measuring satellite signals; and send information indicative of the measurement gap to the user terminal, wherein the measurement message comprises an indication of a measurement of signals from at least one satellite conducted during the measurement gap.

29. The apparatus of claim 23, wherein the processor and the memory are further configured to: receive capability information from the user terminal; and select a handoff procedure for the user terminal based on the received capability information.

30. The apparatus of claim 29, wherein: the capability information indicates whether the user terminal is dual sense capable; and to select the handoff procedure, the processor and the memory are further configured to enable or disable whether the apparatus monitors for a measurement message from the user terminal based on whether the user terminal is dual sense capable.

31. The apparatus of claim 23, wherein the processor and the memory are further configured to: determine a time of a handoff of the user terminal; and transfer user queues prior to the handoff.

32. The apparatus of claim 23, wherein the processor and the memory are further configured to: receive, from the user terminal, a message comprising user terminal paging area information.

33. The apparatus of claim 23, wherein: the processor and the memory are further configured to determine that a measurement gap is not needed for

measuring satellite signals; and as a result of the determination, the generation of the satellite handoff information comprises not including a tune-away time in the satellite handoff information.

34. An apparatus for communication comprising: means for generating satellite handoff information that specifies a handoff time for a particular cell of a particular satellite; means for receiving a measurement message from a user terminal; means for modifying the satellite handoff information based on the measurement message; and means for sending the modified satellite handoff information to the user terminal.

35. The apparatus of claim 34, further comprising: means for performing handoffs for the user terminal to different cells and at least one satellite based on the satellite handoff information.

36. The apparatus of claim 34, further comprising: means for receiving capability information from the user terminal; and means for selecting a handoff procedure for the user terminal based on the received capability information.

37. The apparatus of claim 34, further comprising: means for determining a time of a handoff of the user terminal; and means for transferring user queues prior to the handoff.

38. A non-transitory computer-readable medium storing computer-executable code, including code to: generate satellite handoff information that specifies a handoff time for a particular cell of a particular satellite; receive a measurement message from a user terminal; modify the satellite handoff information based on the measurement message; and send the modified satellite handoff information to the user terminal.

39. A method of communication, comprising: measuring at least one signal from at least one satellite; generating a measurement message based on the measurement of the at least one signal; sending the measurement message; receiving satellite handoff information that is based on the measurement message, wherein the satellite handoff information specifies a handoff time for a particular cell of a particular satellite; and performing a

handoff to the particular cell of the particular satellite based on the satellite handoff information.

40. The method of claim 39, wherein the measurement message comprises at least one of: measurement data based on the at least one signal, a request to advance handoff timing, or a request to delay handoff timing.

41. The method of claim 39, further comprising: receiving information indicative of a measurement gap for measuring satellite signals, wherein the measurement of the at least one signal is conducted during the measurement gap.

42. The method of claim 39, further comprising: determining whether to send the measurement message based on at least one of: whether signals from a current serving satellite are inadequate or whether signals from a target satellite are inadequate.

43. The method of claim 39, further comprising: sending a message comprising user terminal capability information, wherein the received satellite handoff information is based on the user terminal capability information.

44. The method of claim 43, wherein the user terminal capability information indicates at least one of: whether a user terminal can sense multiple cells, whether a user terminal can sense multiple satellites, a user terminal inter-cell tune time, or a user terminal inter-satellite tune time.

45. The method of claim 43, wherein the sending of the message comprising user terminal capability information is triggered as a result of an initial connection to a satellite.

46. The method of claim 39, further comprising: sending a message comprising user terminal location information, wherein the received satellite handoff information is based on the user terminal location information.

47. The method of claim 46, wherein the user terminal location information comprises at least one of: a current user terminal location or a user

terminal motion vector.

48. The method of claim 46, wherein the sending of the message comprising user terminal location information is triggered as a result of at least one of: an initial connection to a satellite, whether a user terminal is beyond a geographical boundary, or whether an error bound has been exceeded.

49. The method of claim 39, wherein the handoff involves a change of at least one of: a satellite access network (SAN), a satellite network portal (SNP) antenna, a satellite cell, or a forward service link (FSL) frequency.

50. The method of claim 39, further comprising: receiving a dedicated preamble signature; and performing a non-contention-based random access procedure using the dedicated preamble signature.

51. The method of claim 39, wherein the satellite handoff information comprises a table that includes a handoff activation time.

52. The method of claim 39, wherein the satellite handoff information comprises at least one tune-away time.

53. The method of claim 39, wherein the satellite handoff information is defined based, in part, on a satellite pointing error.

54. The method of claim 39, further comprising: sending a message comprising user terminal paging area information.

55. The method of claim 39, wherein the handoff information is for at least one future handoff.

56. The method of claim 39, wherein the handoff information is for the next beam handoff and for at least one future satellite handoff.

57. An apparatus for communication comprising: a memory; and a processor coupled to the memory, the processor and the memory configured to: measure at least one signal from at least one satellite;

generate a measurement message based on the measurement of the at least one signal; send the measurement message; receive satellite handoff information that is based on the measurement message, wherein the satellite handoff information specifies a handoff time for a particular cell of a particular satellite; and perform a handoff to the particular cell of the particular satellite based on the satellite handoff information.

58. The apparatus of claim 57, wherein: the processor and the memory are further configured to receive information indicative of a measurement gap for measuring satellite signals; and the measurement of the at least one signal is conducted during the measurement gap.

59. The apparatus of claim 58, wherein the processor and the memory are further configured to: determine whether to send the measurement message based on at least one of: whether signals from a current serving satellite are inadequate, or whether signals from a target satellite are inadequate.

60. The apparatus of claim 57, wherein: the processor and the memory are further configured to send a message comprising user terminal capability information; and the received satellite handoff information is based on the user terminal capability information.

61. The apparatus of claim 60, wherein the user terminal capability information indicates at least one of: whether a user terminal can sense multiple cells, whether a user terminal can sense multiple satellites, a user terminal inter-cell tune time, or a user terminal inter-satellite tune time.

62. The apparatus of claim 57, wherein: the processor and the memory are further configured to send a message comprising user terminal location information; and the received satellite handoff information is based on the user terminal location information.

63. The apparatus of claim 62, wherein the sending of the message comprising user terminal location information is triggered as a result of at least one of: an initial connection to a satellite, whether a user terminal is beyond a geographical boundary, or whether an error bound has been

exceeded.

64. The apparatus of claim 57, wherein the processor and the memory are further configured to: receive a dedicated preamble signature; and perform a non-contention-based random access procedure using the dedicated preamble signature.

65. The apparatus of claim 57, wherein the processor and the memory are further configured to: send a message comprising user terminal paging area information.

66. An apparatus for communication comprising: means for measuring at least one signal from at least one satellite; means for generating a measurement message based on the measurement of the at least one signal; means for sending the measurement message; means for receiving satellite handoff information that is based on the measurement message, wherein the satellite handoff information specifies a handoff time for a particular cell of a particular satellite; means for performing a handoff to the particular cell of the particular satellite based on the satellite handoff information.

67. A non-transitory computer-readable medium storing computer-executable code, including code to: measure at least one signal from at least one satellite; generate a measurement message based on the measurement of the at least one signal; send the measurement message; receive satellite handoff information that is based on the measurement message, wherein the satellite handoff information specifies a handoff time for a particular cell of a particular satellite; and perform a handoff to the particular cell of the particular satellite based on the satellite handoff information.