

CLAIMS

What is claimed is:

- 1 1. A method for wireless communication at a user equipment (UE),
2 comprising:
3 receiving, from a source base station, a conditional handover configuration
4 indicative of a target cell for handover of the UE upon satisfaction of a condition, the
5 conditional handover configuration also indicative of a beam quality threshold for a random
6 access procedure on the target cell upon satisfaction of the condition;
7 initiating a handover procedure to the target cell based at least in part on
8 satisfaction of the condition indicated by the conditional handover configuration;
9 determining, from a plurality of beam measurements of the target cell, a
10 selected beam for the random access procedure on the target cell based at least in part on the
11 beam quality threshold; and
12 transmitting, based at least in part on the selected beam of the target cell, a
13 random access request to the target cell to initiate the random access procedure on the target
14 cell for the handover of the UE.
- 1 2. The method of claim 1, wherein determining the selected beam for the
2 random access procedure comprises:
3 identifying that the conditional handover configuration does not associate
4 contention free random access resources with any beam of the target cell;
5 comparing each of the plurality of beam measurements of the target cell with
6 the beam quality threshold; and
7 identifying one or more beams that satisfy the beam quality threshold.
- 1 3. The method of claim 2, further comprising:
2 selecting a highest quality beam with a highest quality beam measurement
3 value of the identified one or more beams as the selected beam.
- 1 4. The method of claim 2, further comprising:
2 selecting a beam with an earliest configured contention based random access
3 time-frequency resource as the selected beam.

1 5. The method of claim 2, wherein transmitting the random access
2 request to the target cell comprises:
3 transmitting the random access request as part of a contention based random
4 access procedure.

1 6. The method of claim 1, further comprising:
2 identifying that the conditional handover configuration further indicates a set
3 of beams of the target cell configured with contention free random access resources.

1 7. The method of claim 6, wherein determining the selected beam for the
2 random access procedure comprises:
3 comparing each of the plurality of beam measurements of the target cell with
4 the beam quality threshold;
5 identifying one or more beams that satisfy the beam quality threshold;
6 identifying that none of the one or more beams that satisfy the beam quality
7 threshold are among the set of beams of the target cell configured with contention free
8 random access resources; and
9 selecting a highest quality beam of the identified one or more beams that
10 satisfy the beam quality threshold as the selected beam,
11 wherein the random access request is transmitted as part of a contention based
12 random access procedure on the selected highest quality beam of the target cell.

1 8. The method of claim 6, wherein determining the selected beam for the
2 random access procedure comprises:
3 comparing each of the plurality of beam measurements of the target cell with
4 the beam quality threshold;
5 identifying one or more beams that satisfy the beam quality threshold; and
6 selecting a highest quality beam of the identified one or more beams that
7 satisfy the beam quality threshold as the selected beam, regardless of whether the highest
8 quality beam is among the set of beams of the target cell configured with contention free
9 random access resources,
10 wherein the random access request is transmitted on the selected highest
11 quality beam of the target cell as part of either a contention based random access procedure or

12 a contention free random access procedure, based on whether the highest quality beam is
13 among the set of beams configured with contention free random access resources.

1 9. The method of claim 6, wherein determining the selected beam for the
2 random access procedure comprises:
3 comparing each of the plurality of beam measurements of the target cell with
4 the beam quality threshold;
5 identifying one or more beams that satisfy the beam quality threshold; and
6 selecting, as the selected beam, a highest quality beam of the identified one or
7 more beams that satisfy the beam quality threshold and that is also among the set of beams of
8 the target cell configured with contention free random access resources,
9 wherein the random access request is transmitted as part of a contention free
10 random access procedure.

1 10. The method of claim 6, further comprising:
2 identifying that the conditional handover configuration further indicates a
3 beam quality threshold offset for the target cell.

1 11. The method of claim 10, wherein determining the selected beam for
2 the random access procedure comprises:
3 comparing beam measurements of each of the set of beams of the target cell
4 configured with contention free random access resources with the beam quality threshold;
5 identifying that none of the set of beams satisfy the beam quality threshold,
6 but that one or more beams of the set of beams are within the beam quality threshold offset
7 from the beam quality threshold; and
8 selecting a highest quality beam of the identified one or more beams as the
9 selected beam,
10 wherein the random access request is transmitted on the selected highest
11 quality beam as part of a contention free random access procedure.

1 12. The method of claim 1, further comprising:
2 identifying that the conditional handover configuration further indicates a
3 beam quality threshold offset for the target cell,

4 wherein determining the selected beam for the random access procedure
5 comprises:
6 comparing each of the plurality of beam measurements of the target cell with
7 the beam quality threshold;
8 identifying that none of a plurality of beams satisfy the beam quality
9 threshold, but that one or more beams of the plurality of beams are within the beam quality
10 threshold offset from the beam quality threshold; and
11 selecting, as the selected beam, either a first beam of the plurality of beams
12 having an earliest configured contention free random access time-frequency resource or a
13 second beam of the plurality of beams having an earliest configured contention based random
14 access time-frequency resource, the selecting being based at least in part on whether any of
15 the plurality of beams have contention free random access resources configured,
16 wherein the random access request is transmitted as part of either a contention
17 based random access procedure or a contention free random access procedure, based on
18 whether the selected beam is configured with contention free random access resources or
19 contention based random access resources.

1 13. A method for wireless communication at a source base station,
2 comprising:
3 receiving, from a user equipment (UE), a cell measurement report indicative
4 of a target cell; and
5 transmitting, to the UE, a conditional handover configuration indicative of the
6 target cell for handover of the UE upon satisfaction of a condition, the conditional handover
7 configuration also indicative of a beam quality threshold for a random access procedure by
8 the UE on the target cell.

1 14. The method of claim 13, further comprising:
2 configuring one or more contention free random access resources for each
3 beam in a set of beams of the target cell, wherein the conditional handover configuration is
4 also indicative of the set of beams of the target cell configured with the one or more
5 contention free random access resources.

1 15. The method of claim 14, further comprising:

2 determining a beam quality threshold offset for the target cell, wherein the
3 conditional handover configuration is also indicative of the beam quality threshold offset.

1 16. The method of claim 15, wherein the beam quality threshold offset is
2 determined based at least in part on the configured one or more contention free random
3 access resources.

1 17. The method of claim 13, further comprising:
2 determining the condition, the beam quality threshold, a beam quality
3 threshold offset, or some combination thereof, based at least in part on the received cell
4 measurement report, wherein the received cell measurement report is also indicative of one or
5 more beam measurements corresponding to the target cell.

1 18. An apparatus for wireless communication at a user equipment (UE),
2 comprising:
3 means for receiving, from a source base station, a conditional handover
4 configuration indicative of a target cell for handover of the UE upon satisfaction of a
5 condition, the conditional handover configuration also indicative of a beam quality threshold
6 for a random access procedure on the target cell upon satisfaction of the condition;
7 means for initiating a handover procedure to the target cell based at least in
8 part on satisfaction of the condition indicated by the conditional handover configuration;
9 means for determining, from a plurality of beam measurements of the target
10 cell, a selected beam for the random access procedure on the target cell based at least in part
11 on the beam quality threshold; and
12 means for transmitting, based at least in part on the selected beam of the target
13 cell, a random access request to the target cell to initiate the random access procedure on the
14 target cell for the handover of the UE.

1 19. The apparatus of claim 18, wherein the means for determining the
2 selected beam for the random access procedure comprise:
3 means for identifying that the conditional handover configuration does not
4 associate contention free random access resources with any beam of the target cell;
5 means for comparing each of the plurality of beam measurements of the target
6 cell with the beam quality threshold; and

7 means for identifying one or more beams that satisfy the beam quality
8 threshold.

1 20. The apparatus of claim 19, further comprising:
2 means for selecting a highest quality beam with a highest quality beam
3 measurement value of the identified one or more beams as the selected beam.

1 21. The apparatus of claim 19, further comprising:
2 means for selecting a beam with an earliest configured contention based
3 random access time-frequency resource as the selected beam.

1 22. The apparatus of claim 19, wherein the means for transmitting the
2 random access request to the target cell comprise:
3 means for transmitting the random access request as part of a contention based
4 random access procedure.

1 23. The apparatus of claim 18, further comprising:
2 means for identifying that the conditional handover configuration further
3 indicates a set of beams of the target cell configured with contention free random access
4 resources.

1 24. The apparatus of claim 23, wherein the means for determining the
2 selected beam for the random access procedure comprise:
3 means for comparing each of the plurality of beam measurements of the target
4 cell with the beam quality threshold;
5 means for identifying one or more beams that satisfy the beam quality
6 threshold;
7 means for identifying that none of the one or more beams that satisfy the beam
8 quality threshold are among the set of beams of the target cell configured with contention free
9 random access resources; and
10 means for selecting a highest quality beam of the identified one or more beams
11 that satisfy the beam quality threshold as the selected beam,
12 wherein the random access request is part of a contention based random access
13 procedure on the selected highest quality beam of the target cell.

1 25. The apparatus of claim 23, wherein the means for determining the
2 selected beam for the random access procedure comprise:
3 means for comparing each of the plurality of beam measurements of the target
4 cell with the beam quality threshold;
5 means for identifying one or more beams of the plurality of beams that satisfy
6 the beam quality threshold; and
7 means for selecting a highest quality beam of the identified one or more beams
8 that satisfy the beam quality threshold as the selected beam, regardless of whether the highest
9 quality beam is among the set of beams of the target cell configured with contention free
10 random access resources,
11 wherein the random access request is part of either a contention based random
12 access procedure or a contention free random access procedure on the selected highest quality
13 beam of the target cell, based on whether the highest quality beam is among the set of beams
14 configured with contention free random access resources.

1 26. The apparatus of claim 23, wherein the means for determining the
2 selected beam for the random access procedure comprise:
3 means for comparing each of the plurality of beam measurements of the target
4 cell with the beam quality threshold;
5 means for identifying one or more beams that satisfy the beam quality
6 threshold; and
7 means for selecting, as the selected beam, a highest quality beam of the
8 identified one or more beams that satisfy the beam quality threshold and that is also among
9 the set of beams of the target cell configured with contention free random access resources,
10 wherein the random access request is transmitted as part of a contention free random access
11 procedure.

1 27. The apparatus of claim 23, further comprising:
2 means for identifying that the conditional handover configuration further
3 indicates a beam quality threshold offset for the target cell.

1 28. The apparatus of claim 27, wherein the means for determining the
2 selected beam for the random access procedure comprise:

3 means for comparing beam measurements of each of the set of beams of the
4 target cell configured with contention free random access resources with the beam quality
5 threshold;

6 means for identifying that none of the set of beams satisfy the beam quality
7 threshold, but that one or more beams of the set of beams are within the beam quality
8 threshold offset from the beam quality threshold; and

9 means for selecting a highest quality beam of the identified one or more beams
10 as the selected beam, wherein the random access request is transmitted on the selected
11 highest quality beam as part of a contention free random access procedure.

1 29. The apparatus of claim 18, further comprising:

2 means for identifying that the conditional handover configuration further
3 indicates a beam quality threshold offset for the target cell, and wherein the means for
4 determining the selected beam for the random access procedure comprise:

5 means for comparing each of the plurality of beam measurements of the target
6 cell with the beam quality threshold;

7 means for identifying that none of a plurality of beams satisfy the beam
8 quality threshold, but that one or more beams of the plurality of beams are within the beam
9 quality threshold offset from the beam quality threshold; and

10 means for selecting, as the selected beam, either a first beam of the plurality of
11 beams having an earliest configured contention free random access time-frequency resource
12 or a second beam of the plurality of beams having an earliest configured contention based
13 random access time-frequency resource, based at least in part on whether any of the plurality
14 of beams have contention free random access resources configured,

15 wherein the random access request is part of either a contention based random
16 access procedure or a contention free random access procedure, based on whether the
17 selected beam is configured with contention free random access resources or contention
18 based random access resources.

1 30. An apparatus for wireless communication at a source base station,
2 comprising:

3 means for receiving, from a user equipment (UE), a cell measurement report
4 indicative of a target cell; and

5 means for transmitting, to the UE, a conditional handover configuration
6 indicative of the target cell for handover of the UE upon satisfaction of a condition, the
7 conditional handover configuration also indicative of a beam quality threshold for a random
8 access procedure by the UE on the target cell.

1 31. The apparatus of claim 30, further comprising:
2 means for configuring one or more contention free random access resources
3 for each beam in a set of beams of the target cell, wherein the conditional handover
4 configuration is also indicative of the set of beams of the target cell configured with the one
5 or more contention free random access resources.

1 32. The apparatus of claim 31, further comprising:
2 means for determining a beam quality threshold offset for the target cell,
3 wherein the conditional handover configuration is also indicative of the beam quality
4 threshold offset.

1 33. The apparatus of claim 32, wherein the beam quality threshold offset is
2 determined based at least in part on the configured one or more contention free random
3 access resources.

1 34. The apparatus of claim 30, further comprising:
2 means for determining the condition, the beam quality threshold, a beam
3 quality threshold offset, or some combination thereof, based at least in part on the received
4 cell measurement report, wherein the received cell measurement report is also indicative of
5 one or more beam measurements corresponding to the target cell.

1 35. An apparatus for wireless communication at a user equipment (UE),
2 comprising:
3 a processor,
4 memory coupled with the processor; and
5 instructions stored in the memory and executable by the processor to cause the
6 apparatus to:
7 receive, from a source base station, a conditional handover
8 configuration indicative of a target cell for handover of the UE upon satisfaction of a
9 condition, the conditional handover configuration also indicative of a beam quality

10 threshold for a random access procedure on the target cell upon satisfaction of the
11 condition;
12 initiate a handover procedure to the target cell based at least in part on
13 satisfaction of the condition indicated by the conditional handover configuration;
14 determine, from a plurality of beam measurements of the target cell, a
15 selected beam for the random access procedure on the target cell based at least in part
16 on the beam quality threshold; and
17 transmit, based at least in part on the selected beam of the target cell, a
18 random access request to the target cell to initiate the random access procedure on the
19 target cell for the handover of the UE.

1 36. An apparatus for wireless communication at a source base station,
2 comprising:
3 a processor,
4 memory coupled with the processor; and
5 instructions stored in the memory and executable by the processor to cause the
6 apparatus to:
7 receive, from a user equipment (UE), a cell measurement report
8 indicative of a target cell; and
9 transmit, to the UE, a conditional handover configuration indicative of
10 the target cell for handover of the UE upon satisfaction of a condition, the conditional
11 handover configuration also indicative of a beam quality threshold for a random
12 access procedure by the UE on the target cell.

1 37. A non-transitory computer-readable medium storing code for wireless
2 communication at a user equipment (UE), the code comprising instructions executable by a
3 processor to:
4 receive, from a source base station, a conditional handover configuration
5 indicative of a target cell for handover of the UE upon satisfaction of a condition, the
6 conditional handover configuration also indicative of a beam quality threshold for a random
7 access procedure on the target cell upon satisfaction of the condition;
8 initiate a handover procedure to the target cell based at least in part on
9 satisfaction of the condition indicated by the conditional handover configuration;

10 determine, from a plurality of beam measurements of the target cell, a selected
11 beam for the random access procedure on the target cell based at least in part on the beam
12 quality threshold; and
13 transmit, based at least in part on the selected beam of the target cell, a random
14 access request to the target cell to initiate the random access procedure on the target cell for
15 the handover of the UE.

1 38. A non-transitory computer-readable medium storing code for wireless
2 communication at a source base station, the code comprising instructions executable by a
3 processor to:
4 receive, from a user equipment (UE), a cell measurement report indicative of a
5 target cell; and
6 transmit, to the UE, a conditional handover configuration indicative of the
7 target cell for handover of the UE upon satisfaction of a condition, the conditional handover
8 configuration also indicative of a beam quality threshold for a random access procedure by
9 the UE on the target cell.