CLAIMS

1. A method for wireless communication at a user equipment (UE), comprising:

receiving, from a source network entity, a conditional handover configuration indicative of a target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold for a random access procedure on the target cell upon satisfaction of the condition;

initiating a handover procedure to the target cell based at least in part on satisfaction of the condition indicated by the conditional handover configuration;

determining, from a plurality of beam measurements of the target cell, at least two beams of the target cell that satisfy the beam quality threshold;

selecting a beam from the at least two beams for the random access procedure on the target cell based at least in part on a highest beam measurement result value of the at least two beams and an earliest configured random access time-frequency resource of the at least two beams; and

transmitting, based at least in part on the selected beam of the target cell, a random access request to the target cell to initiate the random access procedure on the target cell for the handover of the UE.

2. The method of claim 1, wherein determining the selected beam for the random access procedure comprises:

identifying that the conditional handover configuration does not associate contention free random access resources with any beam of the target cell; and

comparing each of the plurality of beam measurements of the target cell with the beam quality threshold.

3. The method of claim 2, wherein transmitting the random access request to the target cell comprises:

transmitting the random access request as part of a contention based random access procedure.

4. The method of claim 1, further comprising:

identifying that the conditional handover configuration further indicates a set of beams of the target cell configured with contention free random access resources, the random access time-frequency resource comprising the contention free random access resources.

5. The method of claim 4, wherein selecting the beam from the at least two beams for the random access procedure comprises:

comparing each of the plurality of beam measurements of the target cell with the beam quality threshold;

identifying that none of the at least two beams that satisfy the beam quality threshold are among the set of beams of the target cell configured with contention free random access resources; and

selecting a highest quality beam of the at least two beams that satisfy the beam quality threshold as the selected beam,

wherein the random access request is transmitted as part of a contention based random access procedure on the selected highest quality beam of the target cell.

6. The method of claim 4, wherein selecting the beam from the at least two beams for the random access procedure comprises:

comparing each of the plurality of beam measurements of the target cell with the beam quality threshold; and

selecting a highest quality beam of the at least two beams that satisfy the beam quality threshold as the selected beam, regardless of whether the highest quality beam is among the set of beams of the target cell configured with contention free random access resources,

wherein the random access request is transmitted on the selected highest quality beam of the target cell as part of either a contention based random access procedure or a contention free random access procedure, based at least in part on whether the highest quality beam is among the set of beams configured with contention free random access resources.

7. The method of claim 4, wherein selecting the beam from the at least two beams for the random access procedure comprises:

comparing each of the plurality of beam measurements of the target cell with the beam quality threshold; and

selecting, as the selected beam, a highest quality beam of the at least two beams that satisfy the beam quality threshold and that is also among the set of beams of the target cell configured with contention free random access resources,

wherein the random access request is transmitted as part of a contention free random access procedure.

8. The method of claim 4, further comprising:

identifying that the conditional handover configuration further indicates a beam quality threshold offset for the target cell.

9. The method of claim 8, further comprising:

comparing beam measurements of each of a second set of beams of the target cell configured with contention free random access resources with the beam quality threshold, the second set of beams corresponding to a subsequent random access procedure, the random access time-frequency resource comprising the contention free random access resources;

identifying that none of the second set of beams satisfy the beam quality threshold, but that one or more beams of the second set of beams are within the beam quality threshold offset from the beam quality threshold; and

selecting a highest quality beam of the one or more beams as a selected second beam,

wherein a second random access request is transmitted on the selected highest quality beam as part of a contention free random access procedure.

10. The method of claim 1, further comprising:

identifying that the conditional handover configuration further indicates a beam quality threshold offset for the target cell;

comparing each of a second plurality of beam measurements of the target cell with the beam quality threshold;

identifying that none of a second plurality of beams satisfy the beam quality threshold, but that one or more beams of the second plurality of beams are within the beam quality threshold offset from the beam quality threshold; and

selecting either a first beam of the second plurality of beams having an earliest configured contention free random access time-frequency resource or a second beam of the second plurality of beams having an earliest configured contention based random access time-frequency resource, the selecting being based at least in part on whether any of the second plurality of beams have contention free random access resources configured, the random access time-frequency resource comprising the contention free random access time-frequency resource and the contention based random access time-frequency resource,

wherein a second random access request is transmitted as part of either a contention based random access procedure or a contention free random access procedure, based at least in part on whether the first beam configured with contention free random access resources or the second beam configured with contention based random access resources is selected.

11. A method for wireless communication at a source network entity, comprising:

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

transmitting, to the UE, a conditional handover configuration indicative of the target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold and a beam quality threshold offset below the beam quality threshold corresponding to one or more contention free random access resources for a random access procedure by the UE on the target cell.

12. The method of claim 11, further comprising:

configuring the one or more contention free random access resources for each beam in a set of beams of the target cell, wherein the conditional handover configuration is also indicative of the set of beams of the target cell configured with the one or more contention free random access resources.

13. The method of claim 12, wherein the conditional handover configuration is also indicative of the beam quality threshold offset.

14. The method of claim 11, further comprising:

determining the condition, the beam quality threshold, a beam quality threshold offset, or some combination thereof, based at least in part on the received cell measurement report, wherein the received cell measurement report is also indicative of one or more beam measurements corresponding to the target cell.

15. An apparatus for wireless communication at a user equipment (UE), comprising:

a processor; and

memory coupled with the processor, with instructions stored in the memory, the instructions being executable by the processor to cause the apparatus to:

receive, from a source network entity, a conditional handover configuration indicative of a target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold for a random access procedure on the target cell upon satisfaction of the condition;

initiate a handover procedure to the target cell based at least in part on satisfaction of the condition indicated by the conditional handover configuration;

determine, from a plurality of beam measurements of the target cell, at least two beams of the target cell that satisfy the beam quality threshold;

select a beam from the at least two beams for the random access procedure on the target cell based at least in part on a highest beam measurement result value of the at least two beams and an earliest configured random access time-frequency resource of the at least two beams; and

transmit, based at least in part on the selected beam of the target cell, a random access request to the target cell to initiate the random access procedure on the target cell for the handover of the UE.

16. The apparatus of claim 15, wherein the instructions to determine the selected beam for the random access procedure are executable by the processor to cause the apparatus to:

identify that the conditional handover configuration does not associate contention free random access resources with any beam of the target cell; and

compare each of the plurality of beam measurements of the target cell with the beam quality threshold.

17. The apparatus of claim 16, wherein the instructions to transmit the random access request to the target cell are executable by the processor to cause the apparatus to:

transmit the random access request as part of a contention based random access procedure.

18. The apparatus of claim 15, wherein the instructions are further executable by the processor to cause the apparatus to:

identify that the conditional handover configuration further indicates a set of beams of the target cell configured with contention free random access resources, the random access time-frequency resource comprising the contention free random access resources.

19. The apparatus of claim 18, wherein the instructions to select the beam from the at least two beams for the random access procedure are executable by the processor to cause the apparatus to:

compare each of the plurality of beam measurements of the target cell with the beam quality threshold;

identify that none of the at least two beams that satisfy the beam quality threshold are among the set of beams of the target cell configured with contention free random access resources; and

select a highest quality beam of the at least two beams that satisfy the beam quality threshold as the selected beam,

wherein the random access request is transmitted as part of a contention based random access procedure on the selected highest quality beam of the target cell.

20. The apparatus of claim 18, wherein the instructions to select the beam from the at least two beams for the random access procedure are executable by the processor to cause the apparatus to:

compare each of the plurality of beam measurements of the target cell with the beam quality threshold; and

select a highest quality beam of the at least two beams that satisfy the beam quality threshold as the selected beam, regardless of whether the highest quality beam is among the set of beams of the target cell configured with contention free random access resources,

wherein the random access request is transmitted on the selected highest quality beam of the target cell as part of either a contention based random access procedure or a contention free random access procedure, based at least in part on whether the highest quality beam is among the set of beams configured with contention free random access resources.

21. The apparatus of claim 18, wherein the instructions to select the beam from the at least two beams for the random access procedure are executable by the processor to cause the apparatus to:

compare each of the plurality of beam measurements of the target cell with the beam quality threshold; and

select, as the selected beam, a highest quality beam of the at least two beams that satisfy the beam quality threshold and that is also among the set of beams of the target cell configured with contention free random access resources, wherein the random access request is transmitted as part of a contention free random access procedure.

22. The apparatus of claim 18, wherein the instructions are further executable by the processor to cause the apparatus to:

identify that the conditional handover configuration further indicates a beam quality threshold offset for the target cell.

23. The apparatus of claim 22, wherein the instructions are further executable by the processor to cause the apparatus to:

compare beam measurements of each of a second set of beams of the target cell configured with contention free random access resources with the beam quality threshold, the second set of beams corresponding to a subsequent random access procedure, the random access time-frequency resource comprising the contention free random access resources;

identify that none of the second set of beams satisfy the beam quality threshold, but that one or more beams of the second set of beams are within the beam quality threshold offset from the beam quality threshold; and

select a highest quality beam of the one or more beams as a selected second beam, wherein the random access request is transmitted on the selected highest quality beam as part of a contention free random access procedure.

24. The apparatus of claim 15, wherein the instructions are further executable by the processor to cause the apparatus to:

identify that the conditional handover configuration further indicates a beam quality threshold offset for the target cell;

compare each of a second plurality of beam measurements of the target cell with the beam quality threshold;

identify that none of a second plurality of beams satisfy the beam quality threshold, but that one or more beams of the second plurality of beams are within the beam quality threshold offset from the beam quality threshold; and

select either a first beam of the second plurality of beams having an earliest configured contention free random access time-frequency resource or a second beam of the second plurality of beams having an earliest configured contention based random access time-frequency resource, based at least in part on whether any of the plurality of second beams have contention free random access resources configured, the random access time-frequency resource comprising the contention free random access time-frequency resource and the contention based random access time-frequency resource,

wherein a second random access request is transmitted as part of either a contention based random access procedure or a contention free random access procedure, based at least in part on whether the first beam configured with contention free random access resources or the second beam configured with contention based random access resources is selected.

25. An apparatus for wireless communication at a source network entity, comprising:

a processor; and

memory coupled with the processor, with instructions stored in the memory, the instructions being executable by the processor to cause the apparatus to:

receive, from a user equipment (UE), a cell measurement report indicative of a target cell; and

transmit, to the UE, a conditional handover configuration indicative of the target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold and a beam quality threshold offset below the beam quality threshold corresponding to one or more contention free random access resources for a random access procedure by the UE on the target cell.

26. The apparatus of claim 25, wherein the instructions are further executable by the processor to cause the apparatus to:

configure the one or more contention free random access resources for each beam in a set of beams of the target cell, wherein the conditional handover configuration is also indicative of the set of beams of the target cell configured with the one or more contention free random access resources.

27. The apparatus of claim 26, wherein the conditional handover configuration is also indicative of the beam quality threshold offset.

28. The apparatus of claim 25, wherein the instructions are further executable by the processor to cause the apparatus to:

determine the condition, the beam quality threshold, a beam quality threshold offset, or some combination thereof, based at least in part on the received cell measurement report, wherein the received cell measurement report is also indicative of one or more beam measurements corresponding to the target cell.

29. An apparatus for wireless communication at a user equipment (UE), comprising:

means for receiving, from a source network entity, a conditional handover configuration indicative of a target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold for a random access procedure on the target cell upon satisfaction of the condition;

means for initiating a handover procedure to the target cell based at least in part on satisfaction of the condition indicated by the conditional handover configuration;

means for determining, from a plurality of beam measurements of the target cell, at least two beams of the target cell that satisfy the beam quality threshold;

means for selecting a beam from the at least two beams for the random access procedure on the target cell based at least in part on a highest beam measurement result value of the at least two beams and an earliest configured random access time-frequency resource of the at least two beams; and

means for transmitting, based at least in part on the selected beam of the target cell, a random access request to the target cell to initiate the random access procedure on the target cell for the handover of the UE.

30. An apparatus for wireless communication at a source network entity, comprising:

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

means for transmitting, to the UE, a conditional handover configuration indicative of the target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold condition, the conditional handover configuration also indicative of a beam quality threshold and a beam quality threshold offset below the beam quality threshold corresponding to one or more contention free random access resources for a random access procedure by the UE on the target cell.

31. A non-transitory computer-readable medium storing code for wireless communication at a user equipment (UE), the code comprising instructions executable by a processor to:

receive, from a source network entity, a conditional handover configuration indicative of a target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold for a random access procedure on the target cell upon satisfaction of the condition;

initiate a handover procedure to the target cell based at least in part on satisfaction of the condition indicated by the conditional handover configuration;

determine, from a plurality of beam measurements of the target cell, at least two beams of the target cell that satisfy the beam quality threshold;

select a beam from the at least two beams for the random access procedure on the target cell based at least in part on a highest beam measurement result value of the at least two beams and an earliest configured random access time-frequency resource of the at least two beams; and

transmit, based at least in part on the selected beam of the target cell, a random access request to the target cell to initiate the random access procedure on the target cell for the handover of the UE.

32. A non-transitory computer-readable medium storing code for wireless communication at a source network entity, the code comprising instructions executable by a processor to:

receive, from a user equipment (UE), a cell measurement report indicative of a target cell; and

transmit, to the UE, a conditional handover configuration indicative of the target cell for handover of the UE upon satisfaction of a condition, the conditional handover configuration also indicative of a beam quality threshold condition, the conditional handover configuration also indicative of a beam quality threshold and a beam quality threshold offset below the beam quality threshold corresponding to one or more contention free random access resources for a random access procedure by the UE on the target cell.