

CLAIMS

1. A method for wireless communications at a user equipment (UE), comprising:
receiving, from a network entity, a configuration identifying one or more link quality thresholds associated with selection between a two-step random access procedure and a four-step random access procedure, wherein the one or more link quality thresholds correspond to a reference signal received power (RSRP) of one or more reference signals to be measured by the UE in determining a link quality for communication between the UE and the network entity, and wherein the configuration further identifies one or more transmission parameters for a first message of the two-step random access procedure;
determining the RSRP based at least in part on measurements made of at least one of the one or more reference signals;
comparing the RSRP to a corresponding at least one of the one or more link quality thresholds;
and
selecting, for establishing a connection with the network entity, the two-step random access procedure or the four-step random access procedure based at least in part on whether the RSRP satisfies the at least one of the one or more link quality thresholds, wherein selection of the two-step random access procedure or the four-step random access procedure is further based at least in part on UE capabilities.
2. The method of claim 1, wherein receiving, from the network entity, the configuration further comprises:
receiving the configuration via radio resource control signaling.
3. The method of claim 1, wherein receiving, from the network entity, the configuration further comprises:
receiving the configuration via system information signaling.
4. The method of claim 1, further comprising:
receiving, from the network entity, a second configuration updating the one or more link quality thresholds corresponding to the RSRP of the one or more reference signals, wherein the selection of the two-step random access procedure or the four-step random access procedure is based at least in part on whether the RSRP satisfies at least one of the one or more updated link quality thresholds.
5. The method of claim 1, further comprising:
receiving, from the network entity, a second configuration indicating the selection of the four-step random access procedure; and

establishing the connection with the network entity via the four-step random access procedure based at least in part on the second configuration.

6. The method of claim 1, wherein establishing the connection with the network entity further comprises:

establishing the connection via the four-step random access procedure based at least in part on the RSRP not satisfying the at least one of the one or more link quality thresholds.

7. The method of claim 1, wherein establishing the connection with the network entity further comprises:

establishing the connection via the two-step random access procedure based at least in part on the RSRP satisfying the at least one of the one or more link quality thresholds.

8. The method of claim 1, wherein the one or more reference signals to be measured comprise a synchronization signal block, a channel state information reference signal, a positioning reference signal, a system information block, or a combination thereof.

9. The method of claim 1, further comprising:
determining that the UE supports the one or more transmission parameters; and
establishing the connection via the two-step random access procedure based at least in part on determining that the UE supports the one or more transmission parameters.

10. The method of claim 1, further comprising:
determining that the UE does not support the one or more transmission parameters; and
establishing the connection via the four-step random access procedure based at least in part on determining that the UE does not support the one or more transmission parameters.

11. The method of claim 1, wherein the one or more transmission parameters comprise a modulation coding scheme, a waveform, a bandwidth, a payload size, a numerology, or a combination thereof.

12. The method of claim 1, further comprising:
determining that the UE supports the one or more transmission parameters, wherein the selection of the two-step random access procedure or the four-step random access procedure is random based at least in part on determining that the UE supports the one or more transmission parameters.

13. The method of claim 1, further comprising:
receiving, from the network entity, an indication of system loading information, wherein the selection of the two-step random access procedure or the four-step random access procedure is further based at least in part on the indication of the system loading information.
14. The method of claim 13, wherein receiving the indication of the system loading information comprises:
receiving the indication as an increase or a decrease of the one or more link quality thresholds.
15. The method of claim 13, further comprising:
receiving the indication of the system loading information via radio resource control signaling.
16. The method of claim 1, further comprising:
identifying that a random access procedure is to be repeated;
determining a quality of service associated with a logical channel for which the random access procedure is to be repeated; and
re-establishing the connection with the network entity via the two-step random access procedure, the four-step random access procedure, or both based at least in part on the determined quality of service associated with the logical channel.
17. The method of claim 16, wherein re-establishing the connection with the network entity comprises:
re-establishing the connection with the network entity via both the two-step random access procedure and the four-step random access procedure based on determining that the quality of service associated with the logical channel satisfies a quality of service threshold.
18. The method of claim 16, wherein re-establishing the connection with the network entity comprises:
determining an availability, a contention probability, or both associated with both the two-step random access procedure and the four-step random access procedure; and
establishing the connection with the network entity via the two-step random access procedure, the four-step random access procedure, or both based at least in part on the determined availability or the contention probability associated with the two-step random access procedure and the four-step random access procedure.
19. The method of claim 18, further comprising:

determining the availability, the contention probability, or both associated with both the two-step random access procedure and the four-step random access procedure based at least in part on the quality of service associated with the logical channel.

20. The method of claim 16, wherein re-establishing the connection with the network entity comprises:

identifying a second link quality associated with each of a plurality of carrier bandwidths supported by the UE;

determining the quality of service associated with the logical channel;

selecting one of the plurality of carrier bandwidths based on the determined quality of service for transmission via the logical channel and the link quality associated with each of the plurality of carrier bandwidths; and

re-establishing the connection with the network entity via the two-step random access procedure, the four-step random access procedure, or both based on whether the selected one of the plurality of carrier bandwidths is associated with the two-step random access procedure or the four-step random access procedure.

21. An apparatus for wireless communications at a user equipment (UE), comprising:

a processor,

memory coupled with the processor; and

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

receive, from a network entity, a configuration identifying one or more link quality thresholds associated with selection between a two-step random access procedure and a four-step random access procedure, wherein the one or more link quality thresholds correspond to a reference signal received power (RSRP) of one or more reference signals to be measured by the UE in determining a link quality for communication between the UE and the network entity, and wherein the configuration further identifies one or more transmission parameters for a first message of the two-step random access procedure;

determine the RSRP based at least in part on measurements made of at least one of the one or more reference signals;

compare the RSRP to a corresponding at least one of the one or more link quality thresholds; and

select, for establishing a connection with the network entity, the two-step random access procedure or the four-step random access procedure based at least in part on whether the RSRP satisfies the at least one of the one or more link quality thresholds, wherein selection of the two-step random access procedure or the four-step random access procedure is further based at least in part on UE capabilities.

22. The apparatus of claim 21, wherein the instructions to receive, from the network entity, the configuration further are executable by the processor to cause the apparatus to:
receive the configuration via radio resource control signaling.

23. The apparatus of claim 21, wherein the instructions to receive, from the network entity, the configuration further are executable by the processor to cause the apparatus to:
receive the configuration via system information signaling.

24. The apparatus of claim 21, wherein the instructions are further executable by the processor to cause the apparatus to:
receive, from the network entity, a second configuration updating the one or more link quality thresholds corresponding to the one or more reference signals, wherein the selection of the two-step random access procedure or the four-step random access procedure is based at least in part on whether the RSRP satisfies at least one of the one or more updated link quality thresholds.

25. The apparatus of claim 21, wherein the instructions are further executable by the processor to cause the apparatus to:
receive, from the network entity, a second configuration indicating the selection of the four-step random access procedure; and
establish the connection with the network entity via the four-step random access procedure based at least in part on the second configuration.

26. The apparatus of claim 21, wherein the instructions to establish the connection with the network entity further are executable by the processor to cause the apparatus to:
establish the connection via the four-step random access procedure based at least in part on the RSRP not satisfying the at least one of the one or more link quality thresholds.

27. The apparatus of claim 21, wherein the instructions to establish the connection with the network entity further are executable by the processor to cause the apparatus to:
establish the connection via the two-step random access procedure based at least in part on the RSRP satisfying the at least one of the one or more link quality thresholds.

28. The apparatus of claim 21, wherein the instructions are further executable by the processor to cause the apparatus to:

determine that the UE supports the one or more transmission parameters, wherein the selection of the two-step random access procedure or the four-step random access procedure is random based at least in part on determining that the UE supports the one or more transmission parameters.

29. An apparatus for wireless communications at a user equipment (UE), comprising:
means for receiving, from a network entity, a configuration identifying one or more link quality thresholds associated with selection between a two-step random access procedure and a four-step random access procedure, wherein the one or more link quality thresholds correspond to a reference signal received power (RSRP) of one or more reference signals to be measured by the UE in determining a link quality for communication between the UE and the network entity, and wherein the configuration further identifies one or more transmission parameters for a first message of the two-step random access procedure;

means for determining the RSRP based at least in part on measurements made of at least one of the one or more reference signals;

means for comparing the RSRP to a corresponding at least one of the one or more link quality thresholds; and

means for selecting, for establishing a connection with the network entity, the two-step random access procedure or the four-step random access procedure based at least in part on whether the RSRP satisfies the at least one of the one or more link quality thresholds, wherein selection of the two-step random access procedure or the four-step random access procedure is further based at least in part on UE capabilities.

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

receive, from a network entity, a configuration identifying one or more link quality thresholds associated with selection between a two-step random access procedure and a four-step random access procedure, wherein the one or more link quality thresholds correspond to a reference signal received power (RSRP) of one or more reference signals to be measured by the UE in determining a link quality for communication between the UE and the network entity, and wherein the configuration further identifies one or more transmission parameters for a first message of the two-step random access procedure;

determine the RSRP based at least in part on measurements made of at least one of the one or more reference signals;

compare the RSRP to a corresponding at least one of the one or more link quality thresholds; and

select, for establishing a connection with the network entity, the two-step random access procedure or the four-step random access procedure based at least in part on whether the RSRP satisfies the at least one of the one or more link quality thresholds, wherein selection of the two-step random access procedure or the four-step random access procedure is further based at least in part on UE capabilities.