

CLAIMS

1. A method of wireless communication performed by a user equipment (UE), comprising:
 - attempting a random access by transmitting a random access message associated with a two-step random access procedure;
 - receiving an indication that indicates that a preamble of the random access message and a payload of the random access message were successfully received, or that the payload was not successfully received, wherein a media access control (MAC) subheader of the indication does not include a preamble identifier based at least in part on the preamble and the payload being successfully received; and
 - selectively:
 - completing the two-step random access procedure based at least in part on determining that the indication indicates that the preamble of the random access message and the payload of the random access message were successfully received, or
 - reattempting the random access or performing a fallback to a four-step random access procedure based at least in part on determining that the indication indicates that the payload was not successfully received.
2. The method of claim 1, wherein the indication comprises a random access response associated with the two-step random access procedure, and wherein a payload of the random access response includes contention resolution information that identifies a particular UE from which the payload of the random access message was successfully received.
3. The method of claim 2, further comprising reattempting the random access based at least in part on determining that the contention resolution information within the random access response does not identify the UE.
4. The method of claim 2, wherein the random access response indicates that the payload of the random access message was not successfully received based at least in part on an absence of contention resolution information that identifies the UE in the random access response.

5. The method of claim 2, wherein a media access control (MAC) subheader of the random access response includes a set of bits that indicate whether a backoff indicator is included in the MAC subheader.
6. The method of claim 1, wherein the indication comprises a random access response associated with the two-step random access procedure, and wherein the random access response is addressed to a cell radio network temporary identifier (C-RNTI) of the UE.
7. The method of claim 6, wherein a payload of the random access response does not include the C-RNTI.
8. The method of claim 6, wherein the random access response does not include an uplink grant.
9. The method of claim 1, wherein the indication comprises a random access response associated with the two-step random access procedure, and wherein the random access response identifies a cell radio network temporary identifier (C-RNTI) of the UE.
10. The method of claim 9, wherein the random access response does not include an uplink grant.
11. The method of claim 9, wherein a media access control (MAC) subheader of the random access response includes a set of bits that indicate that the random access response is associated with a contention resolution for an idle-mode UE or an inactive-mode UE.
12. The method of claim 1, wherein the UE is in an idle mode or an inactive mode when the random access is attempted.
13. The method of claim 1, wherein the UE is in a connected mode when the random access is attempted.
14. The method of claim 1, wherein the indication comprises a second message of the four-step random access procedure.

15. The method of claim 14, wherein the second message indicates that the payload was not successfully received.

16. The method of claim 14, further comprising performing the fallback to the four-step random access procedure based at least in part on receiving the second message.

17. The method of claim 1, wherein a contention resolution MAC control element of the indication identifies a particular UE for which the payload and the preamble were successfully received.

18. The method of claim 1, wherein the MAC subheader includes a first bit that indicates whether a backoff indicator or the preamble identifier is included in the MAC subheader and a second bit that indicates whether a field of the MAC subheader is used for the backoff indicator or for one or more reserved bits.

19. The method of claim 1, wherein, based at least in part on the preamble and the payload being successfully received, the indication comprises a random access response associated with the two-step random access procedure that includes contention resolution information in a payload of the random access response, wherein the indication includes a media access control (MAC) subheader without a preamble identifier.

20. A method of wireless communication performed by a base station, comprising:
receiving, from a user equipment (UE) attempting a random access, a random access message associated with a two-step random access procedure;

transmitting an indication that indicates that a preamble of the random access message and a payload of the random access message were successfully received, or that the payload was not successfully received, wherein a media access control (MAC) subheader of the indication does not include a preamble identifier based at least in part on the preamble and the payload being successfully received; and

selectively:

completing the two-step random access procedure based at least in part on determining that the indication indicates that the preamble of the random access message and the payload of the random access message were successfully received, or

receiving messaging associated with the UE reattempting the random access or performing a fallback to a four-step random access procedure based at least in part on determining that the payload was not successfully received.

21. The method of claim 20, wherein the indication comprises a random access response associated with the two-step random access procedure, wherein a payload of the random access response includes contention resolution information that identifies a particular UE for which the payload of the random access message was successfully received.

22. The method of claim 21, wherein a media access control (MAC) subheader of the random access response includes a set of bits that indicate whether a backoff indicator is included in the MAC subheader.

23. The method of claim 20, wherein the indication comprises a random access response associated with the two-step random access procedure, and wherein the random access response is addressed to a cell radio network temporary identifier (C-RNTI) of the UE.

24. The method of claim 23, wherein a media access control (MAC) subheader of the random access response includes a set of bits that indicate that the random access response is associated with a contention resolution for an idle-mode UE or an inactive-mode UE.

25. The method of claim 20, wherein, based at least in part on the preamble and the payload being successfully received, the indication comprises a random access response associated with the two-step random access procedure that includes contention resolution information in a payload of the random access response, wherein the indication includes a media access control (MAC) subheader without a preamble identifier.

26. A user equipment (UE) for wireless communication, comprising:
a memory; and
one or more processors coupled to the memory, the memory and the one or more processors configured to:

attempt a random access by transmitting a random access message associated with a two-step random access procedure;

receive an indication that indicates that a preamble of the random access message and a payload of the random access message were successfully received, or that the payload was not successfully received, wherein a media access control (MAC) subheader of the indication does not include a preamble identifier based at least in part on the preamble and the payload being successfully received; and

selectively:

complete the two-step random access procedure based at least in part on determining that the indication indicates that the preamble of the random access message and the payload of the random access message were successfully received, or

reattempt the random access or performing a fallback to a four-step random access procedure based at least in part on determining that the indication indicates that the payload was not successfully received.

27. The UE of claim 26, wherein the indication comprises a random access response associated with the two-step random access procedure, and wherein a payload of the random access response includes contention resolution information that identifies a particular UE from which the payload of the random access message was successfully received.

28. A base station for wireless communication, comprising:

a memory; and

one or more processors coupled to the memory, the memory and the one or more processors configured to:

receive, from a user equipment (UE) attempting a random access, a random access message associated with a two-step random access procedure;

transmit an indication that indicates that a preamble of the random access message and a payload of the random access message were successfully received, or that the payload was not successfully received, wherein a media access control (MAC) subheader of the indication does not include a preamble identifier based at least in part on the preamble and the payload being successfully received; and

selectively:

complete the two-step random access procedure based at least in part on determining that the indication indicates that the preamble of the random access message and the payload of the random access message were successfully received, or

receive messaging associated with the UE reattempting the random access or performing a fallback to a four-step random access procedure based at least in part on determining that the payload was not successfully received.

29. The base station of claim 28, wherein the indication comprises a random access response associated with the two-step random access procedure, wherein a payload of the random access response includes contention resolution information that identifies a particular UE for which the payload of the random access message was successfully received.