CLAIMS

1. A method for wireless communication at a user equipment (UE), comprising:
receiving a configuration for beam recovery resources;
receiving an indication that enables or disables use of the beam recovery resources for a transmission of a beam recovery message;
monitoring reference signals for one or more active beams used to communicate with a base station;
identifying a beam failure of the one or more active beams based at least in part on the monitoring; and
transmitting, according to the received configuration, the beam recovery message to the base station using the beam recovery resources in response to the identified beam failure, wherein transmitting the beam recovery message is based at least in part on the received indication.

2. The method of claim 1, further comprising:
receiving a message from the base station in response to the transmitted beam recovery message, the message comprising an indication of a set of reference signals for beam refinement.

3. The method of claim 1, wherein transmitting the beam recovery message to the base station comprises:
transmitting the beam recovery message on one or more resources in one or more beam directions.

4. The method of claim 1, wherein receiving the configuration for the beam recovery resources comprises:
receiving the configuration as part of radio resource control (RRC) signaling from the base station or as part of a system information broadcast from the base station.

5. The method of claim 1, wherein the configuration comprises a UE-specific configuration for the beam recovery resources.

6. The method of claim 1, wherein the configuration comprises an indication of a plurality of beams for transmitting the beam recovery message, the indication based at least in part on a signal-to-noise ratio (SNR) associated with the UE, and wherein transmitting the beam recovery message comprises:
transmitting the beam recovery message using at least one of the plurality of beams.

7. The method of claim 1, wherein the configuration comprises an indication of a system frame number (SFN) corresponding to the beam recovery resources, a subframe index (SFI) corresponding to the beam recovery resources, a periodicity corresponding to the beam recovery resources, one or more resource elements (REs) corresponding to the beam recovery resources, or a combination thereof.

8. The method of claim 1, wherein the beam recovery resources occupy a first region of resources that is different from a second region of resources allocated for transmission of a random access message.

9. The method of claim 1, wherein the configuration comprises an indication of a mapping between a downlink beam from the base station and the beam recovery resources.

10. The method of claim 1, further comprising:
transmitting, according to the received configuration, a scheduling request (SR) to the base station using the beam recovery resources.

11. The method of claim 1, further comprising:
performing measurements of a set of reference signals, the set of reference signals associated with the one or more active beams, wherein the beam recovery message comprises a measurement report based at least in part on the performed measurements.

12. The method of claim 11, wherein the measurement report comprises a reference signal received power (RSRP), a reference signal received quality (RSRQ), a channel quality indicator (CQI), a precoding matrix indicator (PMI) a rank, or a combination thereof.

13. The method of claim 11, wherein the set of reference signals comprises a synchronization signal, a mobility reference signal, a channel state information reference signal (CSI-RS), or a combination thereof.

14. The method of claim 1, further comprising:
determining a mobility condition associated with the UE, the mobility condition of the UE comprising a direction of the UE relative to the base station, an orientation of the UE, a distance from the base station, or a combination thereof, wherein the beam recovery message comprises an indication of the mobility condition.

15. The method of claim 1, further comprising:
identifying antenna array information corresponding to one or more antenna arrays located at the UE, the antenna array information comprising a number of antenna arrays located at the UE, wherein the beam recovery message comprises an indication of the antenna array information.

16. The method of claim 1, further comprising:
determining an identity of a downlink beam from the base station, wherein the beam recovery message comprises an indication of the identity of the downlink beam.

17. A method for wireless communication at a base station, comprising:
communicating with one or more user equipment (UEs) using one or more active beams;
transmitting a configuration for beam recovery resources;
transmitting an indication that enables or disables use of the beam recovery resources for reception of one or more beam recovery messages from the one or more UEs;
transmitting reference signals for the one or more active beams; and
receiving the one or more beam recovery messages on the beam recovery resources, the one or more beam recovery messages indicating a beam failure of at least one of the one or more active beams, wherein receiving the one or more beam recovery messages is based at least in part on the transmitted indication and the transmitted reference signals.

18. The method of claim 17, further comprising:

transmitting a message to a UE in response to the received one or more beam recovery messages, the message comprising an indication of a set of reference signals for beam refinement.

19. The method of claim 18, wherein receiving the one or more beam recovery messages comprises receiving a measurement report from the UE, the method further comprising:
determining a transmit beam direction based at least in part on the measurement report; and
transmitting the message to the UE using the determined transmit beam direction.

20. The method of claim 18, further comprising:
performing a measurement on uplink signals over the one or more active beams; and
determining a transmit beam direction based at least in part on the measurement of the uplink signals, wherein transmitting the message to the UE is based at least in part on the transmit beam direction.

21. The method of claim 17, wherein receiving the one or more beam recovery messages comprises:
receiving the one or more beam recovery messages on a set of resources in one or more receive beam directions.

22. The method of claim 17, wherein transmitting the configuration for the beam recovery resources comprises:
transmitting the configuration as part of radio resource control (RRC) signaling or as part of a system information broadcast.

23. The method of claim 17, further comprising:
identifying a signal-to-noise ratio (SNR) associated with a UE, wherein the configuration comprises a UE-specific configuration of beam recovery resources based at least in part on the identified SNR.

24. The method of claim 17, wherein the configuration comprises an indication of a plurality of beams for each of the one or more beam recovery messages.

25. The method of claim 17, wherein the beam recovery resources are associated with a first region of resources that are different from a second region resources allocated for transmission of a random access message.

26. The method of claim 17, further comprising:
identifying one or more reference signals associated with a set of downlink beams; and
identifying a mapping between the beam recovery resources and the set of downlink beams based at least in part on the one or more reference signals, wherein the configuration comprises an indication of the mapping.

27. An apparatus for wireless communication, in a system comprising:
a processor;
memory in electronic communication with the processor; and
instructions stored in the memory and operable, when executed by the processor, to cause the apparatus to:
receive a configuration for beam recovery resources;
receive an indication that enables or disables use of the beam recovery resources for a transmission of a beam recovery message;
monitor reference signals for one or more active beams used to communicate with a base station;
identify a beam failure of the one or more active beams based at least in part on the monitoring; and
transmit, according to the received configuration, the beam recovery message to the base station using the beam recovery resources in response to the identified beam failure, wherein transmitting the beam recovery message is based at least in part on the received indication.

28. An apparatus for wireless communication, in a system comprising:
a processor;
memory in electronic communication with the processor; and
instructions stored in the memory and operable, when executed by the processor, to cause the apparatus to:
communicate with one or more user equipment (UEs) using one or more active beams;

transmit a configuration for beam recovery resources;
transmit an indication that enables or disables use of the beam recovery resources for reception of one or more beam recovery messages from the one or more UEs;
transmitting reference signals for the one or more active beams; and
receive the one or more beam recovery messages on the beam recovery resources, the one or more beam recovery messages indicating a beam failure of at least one of the one or more active beams, wherein receiving the one or more beam recovery messages is based at least in part on the transmitted indication and the transmitted reference signals.