

CLAIMS

WHAT IS CLAIMED IS:

1. A method of wireless communication at a user equipment (UE), comprising:
determining, based on a rule, a default uplink transmit beam for transmitting an uplink transmission when an uplink transmit beam is not configured by a base station for the uplink transmission; and
transmitting, to the base station, the uplink transmission on the default uplink transmit beam.
2. The method of claim 1, wherein the uplink transmission comprises at least one of an uplink control channel, a sounding reference signal (SRS), or a scheduling request (SR).
3. The method of claim 2, wherein the determining of the default uplink transmit beam for transmitting the uplink transmission comprises determining a first default uplink transmit beam for transmitting the uplink control channel, the method further comprising:
determining a second default uplink transmit beam for transmitting the SRS.
4. The method of claim 1, wherein the UE determines that the default uplink transmit beam corresponds to a beam used for receiving a downlink transmission, wherein parameters for the default uplink transmit beam correspond to the beam.
5. The method of claim 4, wherein the determining of the default uplink transmit beam based on the rule includes selecting a beam associated with a control resource set (CORESET) having a lowest CORESET identifier.
6. The method of claim 5, wherein the CORESET includes the lowest CORESET identifier in a slot last monitored by the UE.
7. The method of claim 5, wherein the CORESET includes the lowest CORESET identifier among a set of configured CORESETs.
8. The method of claim 4, further comprising:

receiving a downlink shared channel from the base station, and

wherein the determining of the default uplink transmit beam based on the rule includes determining the default uplink transmit beam based on the beam used for receiving the downlink transmission.

9. The method of claim 8, wherein the determining of the default uplink transmit beam based on the beam used for receiving the downlink transmission includes selecting the beam corresponding to a lowest transmission configuration indication (TCI) state identifier of activated TCI states associated with the downlink shared channel.

10. The method of claim 8, wherein the determining of the default uplink transmit beam based on the beam used for receiving the downlink transmission includes selecting the beam corresponding to a transmission configuration indication (TCI) state identifier of TCI states associated with the downlink shared channel.

11. The method of claim 8, wherein the determining of the default uplink transmit beam based on the beam used for receiving the downlink transmission includes selecting the beam corresponding to a last successfully received downlink shared channel beam after a threshold period.

12. The method of claim 4, wherein the determining of the default uplink transmit beam based on the rule includes selecting the beam indicated in downlink control information (DCI).

13. The method of claim 4, wherein the UE communicates with a plurality of transmit-receive points (TRPs), and wherein for each TRP, the determining of the default uplink transmit beam is based on the corresponding beam used for receiving downlink transmissions.

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

a memory; and

at least one processor coupled to the memory and configured to:

determine, based on a rule, a default uplink transmit beam for transmitting an uplink transmission when an uplink transmit beam for the uplink transmission is not configured; and

transmit, to a base station, the uplink transmission on the default uplink transmit beam.

15. A method of wireless communication at a base station, comprising:
transmitting, to a user equipment (UE), a downlink transmission on a downlink beam; and
receiving, from the UE, an uplink transmission on a default uplink transmit beam when the base station has not configured an uplink transmit beam for the uplink transmission
16. The method of claim 15, wherein the uplink transmission comprises at least one of an uplink control channel, a sounding reference signal (SRS), or a scheduling request (SR).
17. The method of claim 16, wherein the selecting of the beam to monitor for receiving the uplink transmission includes selecting a first beam for receiving the uplink control channel, the method further comprising:
selecting a second beam for receiving the SRS.
18. The method of claim 17, wherein the first beam is the same as the second beam.
19. The method of claim 15, further comprising:
selecting a beam to monitor for receiving the uplink transmission, wherein parameters of the selected beam correspond to the downlink beam.
20. The method of claim 19, wherein the selecting of the beam to monitor for receiving the uplink transmission is based on the beam associated with a control resource set (CORESET) having a lowest CORESET identifier.
21. The method of claim 20, wherein the CORESET includes the lowest CORESET identifier in a slot last monitored by the UE.

22. The method of claim 20, wherein the CORESET includes the lowest CORESET identifier among a set of configured CORESETS.
23. The method of claim 20, further comprising transmitting a CORESET identifier for the CORESET via at least one of a radio resource control (RRC) or a medium access control – control element (MAC-CE).
24. The method of claim 19, wherein the downlink transmission is a downlink shared channel, and the selected beam corresponds to a lowest transmission configuration indication (TCI) state identifier of activated TCI states associated with the downlink shared channel.
25. The method of claim 19, wherein the downlink transmission is a downlink shared channel, and the selected beam corresponds to a transmission configuration indication (TCI) state identifier of TCI states associated with the downlink shared channel.
26. The method of claim 19, wherein the downlink transmission is a downlink shared channel, and the selected beam corresponds to a last successfully received downlink shared channel beam after a threshold period.
27. The method of claim 19, wherein the selecting of the beam to monitor for receiving the uplink transmission is based on the beam indicated in downlink control information (DCI).
28. The method of claim 19, wherein the base station communicates using a plurality of transmit-receive points (TRPs), and wherein for each TRP, the selecting of the beam to monitor for receiving the uplink transmission is based on the corresponding downlink beam.
29. The method of claim 15, wherein the downlink transmission includes default uplink spatial relation information for determining the default uplink transmit beam, the method further comprising:

selecting a beam to monitor for receiving a plurality of uplink transmissions based on the default uplink spatial relation information.

30. An apparatus for wireless communication at a base station, comprising:
a memory; and
at least one processor coupled to the memory and configured to:
transmit, to a user equipment (UE), a downlink transmission on a downlink beam; and
receive, from the UE, an uplink transmission on a default uplink transmit beam when the base station has not configured an uplink transmit beam for the uplink transmission.