~~CLAIMS~~

~~**What is claimed is:**~~

CLAIMS

1. A method for wireless communication, comprising:

initiating, at a user equipment (UE), measurements of received reference signals that are to be transmitted in a plurality of downlink transmission beams from a base station;

measuring, responsive to the initiating, one or more parameters of each of the received reference signals to generate a plurality of sets of measured beam parameters each associated with a corresponding downlink transmission beam;

reporting, to the base station, each of the plurality of sets of measured beam parameters;

receiving, responsive to the reporting the plurality of sets of measured beam parameters, a plurality of transmission configuration indicator (TCI) states ~~for use in deterministically~~associated with an order for receiving a subsequent plurality of sequential transmission beams from the base station; ~~and~~

determining that a repetitive order of transmission beam parameters corresponding to the plurality of TCI states is occurring, wherein the order for receiving the subsequent plurality of sequential transmission beams is based at least in part on the repetitive order; and

storing, at the UE, the plurality of TCI states.

2. The method of claim 1, wherein the measuring the one or more parameters of each of the received reference signals comprises:

measuring a first reference signal in a first transmission slot; and

measuring one or more subsequent reference signals in one or more subsequent transmission slots, each of the one or more subsequent transmission slots being at predetermined intervals.

3. The method of claim 2, wherein the predetermined intervals are configured at the UE by the base station.

4. The method of claim 1, wherein the initiating the measurements of received reference signals comprises:

receiving a trigger indication from the base station to initiate the measurements of received reference signals.

5. The method of claim 4, wherein the trigger indication is received in radio resource control (RRC) signaling, a medium access control (MAC) control element, in downlink control information (DCI), or any combination thereof.

6. The method of claim 1, further comprising:

receiving, from the base station, a second indication that the base station is starting transmission of the plurality of sequential transmission beams; and

applying the plurality of TCI states in a deterministic manner according to the order for receiving the subsequent plurality of sequential transmission beams to generate receive beamforming parameters for use in receiving each transmission beam of the plurality of sequential transmission beams.

7. The method of claim 6, wherein the second indication is received in a downlink control information (DCI) transmission from the base station, in a medium access control (MAC) control element from the base station, in radio resource control signaling from the base station, or any combination thereof.

8. The method of claim 6, wherein the applying the plurality of TCI states comprises:

identifying a first TCI state of the plurality of TCI states for a first transmission beam of the plurality of sequential transmission beams; and

identifying subsequent TCI states of the plurality of TCI states for remaining transmission beams of the plurality of sequential transmission beams based at least in part on the first TCI state and subsequent deterministic TCI states that follow the first TCI state.

9. The method of claim 8, wherein the identifying the subsequent TCI states is performed independently of signaling from the base station.

10. The method of claim 1, wherein the plurality of TCI states comprises a table of TCI states, and wherein the method further comprises:

receiving an indication of a first TCI state from the table of TCI states that is to be used in receiving a first transmission beam of the plurality of sequential transmission beams; and

receiving the first transmission beam using receive beamforming parameters that are based at least in part on the first TCI state.

11. The method of claim 10, wherein the UE stores a plurality of analog beamforming weight configurations that each have an associated identification (ID), and wherein each TCI state of the plurality of TCI states indicates an ID for one of the plurality of analog beamforming weight configurations.

12. The method of claim 10, wherein the plurality of TCI states comprises a first subset of TCI states for receiving control resource set transmission beams and a second subset TCI states for receiving physical downlink shared channel (PDSCH) transmission beams.

13. The method of claim 1, wherein the measuring one or more parameters of each of a plurality of reference signals is performed as part of a beam selection procedure, a beam refinement procedure, or any combinations thereof.

14. The method of claim 1, further comprising:

repeating the measuring, the reporting, and the receiving until a deactivation of the measurements of received reference signals.

15. The method of claim 14, wherein the deactivation corresponds to an expiration of a timer associated with the measurements of received reference signals or a receipt of a deactivation indication from the base station.

16. The method of claim 1, further comprising:

~~determining that a repetitive order of transmission beam parameters corresponding to the plurality of TCI states is occurring; and~~

transmitting a signal to the base station to initiate using the plurality of TCI states to receive one or more subsequent transmission beams from the base station.

17. The method of claim 1, further comprising:

using the plurality of TCI states to receive two or more subsequent transmission beams from the base station; and

measuring a tracking reference signal (TRS) associated with the two or more subsequent transmission beams for beam tracking and channel quality information feedback.

18. The method of claim 17, wherein the one or more parameters for the TRS are determined based at least in part on the plurality of TCI states.

19. The method of claim 1, further comprising:

receiving a trigger for an aperiodic channel state information reference signal (CSI-RS) measurement from the base station;

receiving the CSI-RS using a TCI state selected from the plurality of TCI states;

measuring one or more channel quality parameters based on the CSI-RS; and

transmitting the measured one or more channel quality parameters to the base station.

20. The method of claim 19, further comprising:

receiving one or more TCI states based on the measured one or more channel quality parameters.

21. The method of claim 1, further comprising:

receiving one or more subsequent transmissions from the base station using one or more of the plurality of TCI states;

measuring one or more channel quality characteristics of the one or more subsequent transmissions; and

determining a beam failure based at least on part on one or more of the channel quality characteristics being below a threshold.

22. The method of claim 1, wherein the measurements comprise periodic measurements, or semi-periodic measurements, or a combination thereof.

23. The method of claim 1, wherein:

measuring the one or more parameters comprises:

_____measuring the one or more parameters of the received reference signals from a first transmission reception point (TRP) to generate a first set of measured beam parameters; and

_____measuring the one or more parameters of the received reference signals from a second TRP to generate a second set of measured beam parameters; and

receiving the plurality of TCI states comprises receiving a first TCI state associated with a first TRP of the plurality of TCI states, and a second TCI state associated with a second TRP of the plurality of TCI states.

~~24. A method for wireless communication, comprising:~~

~~transmitting, from a base station, an indication to a user equipment (UE) to initiate measurements of periodically transmitted reference signals that are to be transmitted in a plurality of downlink transmission beams from the base station;~~

~~transmitting a plurality of reference signals to the UE via the plurality of downlink transmission beams, each successive reference signal of the plurality of reference signals transmitted at predetermined time period following a prior reference signal transmission;~~

~~receiving, from the UE, one or more parameters associated with each of the plurality of reference signals;~~

~~determining a plurality of transmission configuration indicator (TCI) states for use in deterministically transmitting a subsequent plurality of sequential transmission beams to the UE;~~

~~storing, at the base station, the plurality of TCI states; and~~

~~transmitting the plurality of TCI states to the UE.~~

~~25. The method of claim 24, wherein the transmitting the plurality of reference signals comprises:~~

~~transmitting a first reference signal via a first transmission beam in a first transmission slot; and~~

~~transmitting one or more subsequent reference signals via one or more subsequent transmission beams in one or more subsequent transmission slots, each of the one or more subsequent transmission slots being at predetermined intervals.~~

~~26. The method of claim 25, further comprising:~~

~~configuring the UE to measure the reference signals at the predetermined intervals.~~

~~27. The method of claim 24, further comprising:~~

~~transmitting a trigger indication to the UE to initiate the measurements of the periodically transmitted reference signals.~~

28. The method of claim 27, wherein the trigger indication is transmitted in radio resource control (RRC) signaling, a medium access control (MAC) control element, in downlink control information (DCI), or any combination thereof.

29. The method of claim 24, further comprising:

transmitting, to the UE, a second indication that the base station is starting transmission of the plurality of sequential transmission beams; and

applying the plurality of TCI states in a deterministic manner to generate transmit beamforming parameters for use in transmitting each transmission beam of the plurality of sequential transmission beams.

30. The method of claim 29, wherein the second indication is transmitted in a downlink control information (DCI) transmission, in a medium access control (MAC) control element, in radio resource control signaling, or any combination thereof.

31. The method of claim 29, wherein the applying the plurality of TCI states comprises:

identifying a first TCI state of the plurality of TCI states for a first transmission beam of the plurality of sequential transmission beams; and

identifying subsequent TCI states of the plurality of TCI states for remaining transmission beams of the plurality of sequential transmission beams based at least in part on the first TCI state and subsequent deterministic TCI states that follow the first TCI state.

32. The method of claim 24, wherein the plurality of TCI states comprises a table of TCI states, and wherein the method further comprises:

transmitting an indication of a first TCI state from the table of TCI states that is to be used by the UE in receiving a first transmission beam; and

transmitting the first transmission beam using beamforming parameters that are based at least in part on the first TCI state.

33. The method of claim 32, wherein the base station stores a plurality of analog beamforming weight configurations that each have an associated identification (ID), and wherein each TCI state of the plurality of TCI states indicates an ID for one of the plurality of analog beamforming weight configurations.

34. The method of claim 32, wherein the plurality of TCI states comprises a first subset of TCI states for transmitting control resource set transmission beams and a second subset TCI states for transmitting physical downlink shared channel (PDSCH) transmission beams.

35. The method of claim 24, further comprising:

determining that a repetitive order of transmission beam parameters corresponding to the plurality of TCI states is occurring; and

transmitting a signal to the base station to initiate using the plurality of TCI states to receive one or more subsequent transmission beams from the base station.

36. The method of claim 24, further comprising:

using the plurality of TCI states for transmitting two or more subsequent transmission beams to the UE; and

transmitting, in each of the two or more subsequent transmission beams, a tracking reference signal (TRS) for beam tracking and channel quality information feedback from the UE.

37. The method of claim 24, further comprising:

transmitting a trigger for an aperiodic channel state information reference signal (CSI-RS) measurement by the UE;

transmitting the CSI-RS using a set of transmission beam parameters selected from the plurality of TCI states; and

receiving one or more measured channel quality parameters from the UE.

38. The method of claim 37, further comprising:

performing a beam refinement procedure based at least in part on the received one or more measured channel quality parameters;

updating one or more of the TCI states based at least in part on the beam refinement procedure; and

transmitting the one or more updated TCI states to the UE.

39. The method of claim 24, wherein determining the plurality of TCI states comprises:

~~determining at least a first TCI state associated with a first transmission reception point (TRP) and a second TCI state associated with a second TRP, wherein the one or more parameters associated with each of the plurality of reference signals comprise one or more parameters associated with reference signals from the first TRP and one or more parameters associated with reference signals from the second TRP.~~

~~40. The method of claim 24, wherein the measurements comprise periodic measurements, or semi-periodic measurements, or a combination thereof.~~

~~41.~~24. An apparatus for wireless communication, comprising:

means for initiating, at a user equipment (UE), measurements of received reference signals that are to be transmitted in a plurality of downlink transmission beams from a base station;

means for measuring, responsive to the initiating, one or more parameters of each of the received reference signals to generate a plurality of sets of measured beam parameters each associated with a corresponding downlink transmission beam;

means for reporting each of the plurality of sets of measured beam parameters to the base station;

means for receiving, responsive to the reporting the plurality of sets of measured beam parameters, a plurality of transmission configuration indicator (TCI) states ~~for use in deterministically~~associated with an order for receiving a subsequent plurality of sequential transmission beams from the base station; ~~and~~

means for ~~storing, at the UE,~~determining that a repetitive order of transmission beam parameters corresponding to the plurality of TCI states~~.~~

~~42. The apparatus of claim 41, further comprising:~~

~~means~~ is occurring, wherein the order for receiving~~, from~~ the ~~base station, a second indication that the base station is starting transmission of the~~subsequent plurality of sequential transmission beams~~; and~~

~~means for applying the plurality of TCI states in a deterministic manner to generate receive beamforming parameters for use in receiving each transmission beam of the plurality of sequential transmission beams.~~

~~43. The apparatus of claim 42, wherein the means for applying the plurality of TCI states comprises:~~

~~means for identifying a first TCI state of the plurality of TCI states for a first transmission beam of the plurality of sequential transmission beams; and~~

~~means for identifying subsequent TCI states of the plurality of TCI states for remaining transmission beams of the plurality of sequential transmission beams~~ is based at least in part on the ~~first TCI state and subsequent deterministic TCI states that follow the first TCI state.~~repetitive order; and

~~44. The apparatus of claim 41, further comprising:~~

means for ~~receiving a trigger for an aperiodic channel state information reference signal (CSI-RS) measurement from~~storing, at the ~~base station;~~

~~means for receiving the CSI-RS using a TCI state selected from~~UE, the plurality of TCI states~~;~~.

~~means for measuring one or more channel quality parameters based on the CSI-RS; and~~

~~means for transmitting the measured one or more channel quality parameters to the base station.~~

~~45~~25. An apparatus for wireless communication, comprising:

~~means for transmitting, from a base station, an indication to a user equipment (UE) to initiate measurements of periodically transmitted reference signals that are to be transmitted in a plurality of downlink transmission beams from the base station;~~

~~means for transmitting a plurality of reference signals to the UE via the plurality of downlink transmission beams, each successive reference signal of the plurality of reference signals transmitted at predetermined time period following a prior reference signal transmission;~~

~~means for receiving, from the UE, one or more parameters of associated with each of the plurality of reference signals;~~

~~means for determining a plurality of transmission configuration indicator (TCI) states for use in deterministically transmitting a subsequent plurality of sequential transmission beams to the UE;~~

~~means for storing, at the base station, the plurality of TCI states; and~~

~~means for transmitting the plurality of TCI states to the UE.~~

~~46. The apparatus of claim 45, further comprising:~~

means for transmitting, to the UE, a second indication that the base station is starting transmission of the plurality of sequential transmission beams; and

means for applying the plurality of TCI states in a deterministic manner to generate transmit beamforming parameters for use in transmitting each transmission beam of the plurality of sequential transmission beams.

47. The apparatus of claim 45, further comprising:

means for transmitting a trigger for an aperiodic channel state information reference signal (CSI-RS) measurement by the UE;

means for transmitting the CSI-RS using a set of transmission beam parameters selected from the plurality of TCI states; and

means for receiving one or more measured channel quality parameters from the UE.

48. The apparatus of claim 45, further comprising:

means for performing a beam refinement procedure based at least in part on the received one or more measured channel quality parameters;

means for updating one or more of the plurality of TCI states based at least in part on the beam refinement procedure; and

means for transmitting the one or more updated TCI states to the UE.

49. An apparatus for wireless communication, comprising:

a processor;

memory in electronic communication with the processor; and

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

initiate, at a user equipment (UE), measurements of received reference signals that are to be transmitted in a plurality of downlink transmission beams from a base station;

measure, responsive to the initiating, one or more parameters of each of the received reference signals to generate a plurality of sets of measured beam parameters each associated with a corresponding downlink transmission beam;

report each of the plurality of sets of measured beam parameters to the base station;

receive, responsive to the reporting the plurality of sets of measured

beam parameters, a plurality of transmission configuration indicator (TCI) states ~~for use in deterministically~~associated with an order for receiving a subsequent plurality of sequential transmission beams from the base station; ~~and~~

determine that a repetitive order of transmission beam parameters corresponding to the plurality of TCI states is occurring, wherein the order for receiving the subsequent plurality of sequential transmission beams is based at least in part on the repetitive order; and

store, at the UE, the plurality of TCI states.

~~50. An~~26. The apparatus ~~for wireless communication, comprising:~~

~~a processor;~~

~~memory in electronic communication with the processor; and~~

~~of claim 25, wherein the~~ instructions ~~stored in the memory and~~are further executable by the processor to cause the apparatus to:

~~transmit~~receive, from ~~a~~the base station, ~~an~~a second indication ~~to a user equipment (UE) to initiate measurements of periodically transmitted reference signals~~ that the base station is starting transmission of the plurality of sequential transmission beams; and

apply the plurality of TCI states in a deterministic manner to generate receive beamforming parameters for use in receiving each transmission beam of the plurality of sequential transmission beams.

27. The apparatus of claim 26, wherein the applying the plurality of TCI states comprises identifying a first TCI state of the plurality of TCI states for a first transmission beam of the plurality of sequential transmission beams, and identifying subsequent TCI states of the plurality of TCI states for remaining transmission beams of the plurality of sequential transmission beams based at least in part on the first TCI state and subsequent deterministic TCI states that follow the first TCI state.

28. The apparatus of claim 25, wherein the instructions are further executable by the processor to ~~be transmitted in a plurality of downlink transmission beams~~cause the apparatus to:

receive a trigger for an aperiodic channel state information reference signal (CSI-RS) measurement from the base station;

~~transmit a plurality of reference signals to the UE via the plurality of downlink transmission beams, each successive reference signal of the plurality of~~

~~reference signals transmitted at predetermined time period following a prior reference signal transmission;~~

receive~~,~~ the CSI-RS using a TCI state selected from the ~~UE, one or more parameters of associated with each of the plurality of reference signals;~~

~~determine a plurality of transmission configuration indicator (TCI) states for use in deterministically transmitting a subsequent plurality of sequential transmission beams to the UE;~~

~~store, at the base station, the~~ plurality of TCI states; ~~and~~

measure one or more channel quality parameters based on the CSI-RS; and

transmit the ~~plurality of TCI states~~measured one or more channel quality parameters to the ~~UE~~base station.

~~51~~29. A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:

initiate, at a user equipment (UE), measurements of received reference signals that are to be transmitted in a plurality of downlink transmission beams from a base station;

measure, responsive to the initiating, one or more parameters of each of the received reference signals to generate a plurality of sets of measured beam parameters each associated with a corresponding downlink transmission beam;

report each of the plurality of sets of measured beam parameters to the base station;

receive, responsive to the reporting the plurality of sets of measured beam parameters, a plurality of transmission configuration indicator (TCI) states ~~for use in deterministically~~associated with an order for receiving a subsequent plurality of sequential transmission beams from the base station; ~~and~~

~~store, at the UE, the plurality of TCI states.~~

~~52. A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:~~

~~transmit, from a base station, an indication to a UE to initiate measurements of periodically transmitted reference signals that are to be transmitted in a plurality of downlink~~ determine that a repetitive order of transmission ~~beams from the base station;~~

~~transmit a plurality of reference signals to the UE via the plurality of downlink transmission beams, each successive reference signal of the plurality of reference signals transmitted at predetermined time period following a prior reference signal transmission;~~

~~receive, from the UE, one or more~~beam parameters ~~of associated with each of~~corresponding to the plurality of ~~reference signals;~~

~~determine a plurality of transmission configuration indicator (~~TCI~~)~~ states is occurring, wherein the order for ~~use in deterministically transmitting a~~receiving the subsequent plurality of sequential transmission beams ~~to the UE;~~

~~store, at the base station, the plurality of TCI states~~is based at least in part on the repetitive order; and

~~transmit~~store, at the UE, the plurality of TCI states ~~to the UE~~.