CLAIMS

~~**WHAT IS CLAIMED IS:**~~

1.——A method of wireless communication, comprising, at a user equipment (UE):

transmitting a message comprising data corresponding to one or more active transmission configuration states supported by the UE for detecting downlink beamformed signals;

receiving, from at least an access point and based on the message, a response corresponding to one or more active transmission configuration states;

determining the one or more active transmission configuration states based, at least in part, on the response, wherein an active transmission configuration state of the determined active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

detecting, based on at least one of the determined active transmission configuration states, one or more downlink beamformed signals transmitted by the access point.

2.——The method of claim 1, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.

3. ——The method of claim 1, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.

4. ——The method of claim 1, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).

5.——The method of claim 4, wherein the A-CSI-RS is in one TCI state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.

6.——The method of claim 4, wherein the A-CSI-RS is configured with a certain number of trigger states, wherein each trigger state has its own TCI state.

7.——The method of claim 6, wherein the number of trigger states of the A-CSI-RS is configured based on the message.

8.——The method of claim 1, wherein the response comprises at least one of: a CSI-RS, semi-persistent CRS, or aperiodic CSI-RS (A-CSI-RS).

9.——The method of claim 8, wherein the A-CSI-RS comprises a number of trigger states, which are configurable based on the message.

10. ——The method of claim 1, wherein the multiple possible triggers have different transmission configuration states for the reference signal.

11.—— The method of claim 1, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.

12.—— The method of claim 1, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.

13.—— The method of claim 1, wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response correspond to, for the selected transmission configuration state, another one of the multiple possible triggers for the reference signal.

14.—— The method of claim 1, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS) and wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response correspond to a transmission configuration state that does not include an A-CSI-RS.

15.—— The method of claim 1, wherein the active transmission configuration state corresponds to a transmission configuration state that is at least one of configured by a radio resource control (RRC) message or further indicated or down selected by a media access control (MAC) control element (CE).

16.—— The method of claim 11, wherein ~~processing the one or more configurations includes~~ determining the one or more active transmission configuration ~~state~~states is based on detecting a distinct transmission configuration identifier or a distinct quasi-colocation (QCL) type of the active transmission configuration state.

17.—— The method of claim 1, wherein the one or more ~~configurations of~~ active transmission configuration states include selected transmission configuration states indicated in at least one of a media access control (MAC) control element (CE) or a radio resource control (RRC) signal related to at least one of a downlink control channel or a downlink shared channel.

18.—— An apparatus for wireless communication, comprising:

a transceiver;

a memory configured to store instructions; and

one or more processors communicatively coupled with the transceiver and the memory, wherein the one or more processors are configured to:

transmit a message comprising data corresponding to one or more active transmission configuration states supported by the apparatus for detecting downlink beamformed signals;

receive, from at least an access point and based on the message, a response corresponding to one or more active transmission configuration states;

determine the one or more active transmission configuration states based, at least in part, on the response, wherein an active transmission configuration state of the determined active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

detect, based on at least one of the determined active transmission configuration states, one or more downlink beamformed signals transmitted by the access point.

19. The apparatus of claim 18, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.

20. The apparatus of claim 18, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.

21. The apparatus of claim 18, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).

22. The apparatus of claim 21, wherein the A-CSI-RS is in one TCI state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.

23. The apparatus of claim 18, wherein the multiple possible triggers have different transmission configuration states for the reference signal.

24. The apparatus of claim 18, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.

25. The apparatus of claim 18, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.

26. The apparatus of claim 18, wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response correspond to, for the selected transmission configuration state, another one of the multiple possible triggers for the reference signal.

27. The apparatus of claim 18, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS) and wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response correspond to a transmission configuration state that does not include an A-CSI-RS.

28.—— The apparatus of claim 18, wherein the active transmission configuration state corresponds to a transmission configuration state that is at least one of configured by a radio resource control (RRC) message or further indicated or down selected by a media access control (MAC) control element (CE).

29.—— The apparatus of claim 28, wherein the one or more processors are configured to ~~process~~determine the one or more ~~configurations at least in part by determining the~~ active transmission configuration state based on detecting a distinct transmission configuration identifier or a distinct quasi-colocation (QCL) type of the active transmission configuration state.

30.—— The apparatus of claim 18, wherein the one or more ~~configurations of~~ active transmission configuration states include selected transmission configuration states indicated in at least one of a media access control (MAC) control element (CE) or a radio resource control (RRC) signal related to at least one of a downlink control channel or a downlink shared channel.

31.—— An apparatus for wireless communication, comprising:

means for transmitting a message comprising data corresponding to one or more active transmission configuration states supported by the ~~UE~~apparatus for detecting downlink beamformed signals;

means for receiving, from at least an access point and based on the message, a response corresponding to one or more active transmission configuration states;

means for determining the one or more active transmission configuration states based, at least in part, on the response, wherein an active transmission configuration state of the determined active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

means for detecting, based on at least one of the determined active transmission configuration states, one or more downlink beamformed signals transmitted by the access point.

~~32. The apparatus of claim 31, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.~~

~~33. The apparatus of claim 31, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.~~

~~34. The apparatus of claim 31, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).~~

~~35. The apparatus of claim 34, wherein the A-CSI-RS is in one TCI state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.~~

~~36. The apparatus of claim 31, wherein the multiple possible triggers have different transmission configuration states for the reference signal.~~

~~37. The apparatus of claim 31, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.~~

~~38. The apparatus of claim 31, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.~~

~~39. A~~32. A non-transitory computer-readable medium, comprising code executable by one or more processors for wireless communications~~,~~ by a user equipment (UE), the code comprising:

code for transmitting a message comprising data corresponding to one or more active transmission configuration states supported by the UE for detecting downlink beamformed signals;

code for receiving, from at least an access point and based on the message, a response corresponding to one or more active transmission configuration states;

code for determining the one or more active transmission configuration states based, at least in part, on the response, wherein an active transmission configuration state of the determined active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

code for detecting, based on at least one of the determined active transmission configuration states, one or more downlink beamformed signals transmitted by the access point.

~~40. The computer-readable medium of claim 39, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.~~

~~41. The computer-readable medium of claim 39, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.~~

~~42. The computer-readable medium of claim 39, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).~~

~~43. The computer-readable medium of claim 42, wherein the A-CSI-RS is in one TCI state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.~~

~~44. The computer-readable medium of claim 39, wherein the multiple possible triggers have different transmission configuration states for the reference signal.~~

~~45. The computer-readable medium of claim 39, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.~~

~~46. The computer-readable medium of claim 39, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.~~

~~47.~~ 33. A method of wireless communication, comprising, at an access point:

receiving, from a user equipment (UE), a message comprising data corresponding to one or more transmission configuration states supported by the UE for detecting downlink beamformed signals;

generating, based, at least in part, on the message, a response corresponding to one or more active transmission configuration states, wherein an active transmission configuration state of the one or more active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

transmitting the response to the UE.

~~48.~~ 34. The method of claim ~~47~~33, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.

~~49.~~ 35. The method of claim ~~47~~33, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.

~~50.~~ 36. The method of claim ~~47~~33, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).

~~51.~~ 37. The method of claim ~~50~~36, wherein the A-CSI-RS is in one transmission configuration state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.

~~52.~~ 38. The method of claim ~~50~~36, wherein the A-CSI-RS is configured with a certain number of trigger states, wherein each trigger state has its own TCI state.

~~53.~~ 39. The method of claim ~~52~~38, wherein the number of trigger states of the A-CSI-RS is configured based on the message.

~~54.~~ 40. The method of claim ~~47~~33, wherein the response comprises at least one of: a CSI-RS, semi-persistent CRS, or aperiodic CSI-RS (A-CSI-RS).

~~55.~~ 41. The method of claim ~~54~~40, wherein the A-CSI-RS comprises a number of trigger states, which are configurable based on the message.

~~56.~~ 42. The method of claim ~~47~~33, wherein the multiple possible triggers have different transmission configuration states for the reference signal.

~~57.~~ 43. The method of claim ~~47~~33, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.

~~58.~~ 44. The method of claim ~~47~~33, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.

~~59.~~ 45. The method of claim ~~47~~33, further comprising transmitting, based on the one or more configurations, one or more beamformed signals to the UE.

~~60.~~ 46. The method of claim ~~47~~33, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS), and wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response each represent one of the one or more active transmission configuration states in the one or more configurations and correspond to either a first TCI state that does not include the A-CSI-RS or a second TCI state that includes another one of multiple possible triggers for the A-CSI-RS.

~~61.~~ 47. The method of claim ~~47~~33, wherein the active transmission configuration state is at least one of configured by radio resource control (RRC) message or further indicated or down selected by a media access control (MAC) control element (CE) for the reference signal.

~~62.~~ 48. The method of claim ~~61~~47, wherein generating the ~~one or more configurations~~response includes indicating ~~the active transmission configuration state as one of~~ the one or more active transmission configuration states based on detecting a distinct transmission configuration identifier or a distinct quasi-colocation (QCL) type of the active transmission configuration state.

~~63.~~ 49. The method of claim ~~47~~33, wherein the one or more ~~configurations of~~ active transmission configuration states correspond to selected transmission configuration states indicated in at least one of a media access control (MAC) control element (CE) or a radio resource control (RRC) signal sent to the UE and related to at least one of a downlink control channel or a downlink shared channel.

~~64.~~ 50. An apparatus for wireless communication, comprising:

a transceiver;

a memory configured to store instructions; and

one or more processors communicatively coupled with the transceiver and the memory, wherein the one or more processors are configured to:

receive, from a user equipment (UE), a message comprising data corresponding to one or more transmission configuration states supported by the UE for detecting downlink beamformed signals;

generate, based, at least in part, on the message, a response corresponding to one or more active transmission configuration states, wherein an active transmission configuration state of the one or more active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

transmit the response to the UE.

~~65.~~ 51. The apparatus of claim ~~64~~50, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.

~~66.~~ 52. The apparatus of claim ~~64~~50, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.

~~67.~~ 53. The apparatus of claim ~~64~~50, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).

~~68.~~ 54. The apparatus of claim ~~67~~53, wherein the A-CSI-RS is in one transmission configuration state selected by a media access control (MAC)-control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.

~~69.~~ 55. The apparatus of claim ~~64~~50, wherein the multiple possible triggers have different transmission configuration states for the reference signal.

~~70.~~ 56. The apparatus of claim ~~64~~50, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.

~~71.~~ 57. The apparatus of claim ~~64~~50, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.

~~72.~~ 58. The apparatus of claim ~~64~~50, wherein the one or more processors are further configured to transmit, based on the one or more configurations, one or more beamformed signals to the UE.

~~73.~~ 59. The apparatus of claim ~~64~~50, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS), and wherein one or more additional active transmission configuration states indicated in the ~~one or more configurations~~response each represent one of the one or more active transmission configuration states in the one or more configurations and correspond to either a first TCI state that does not include the A-CSI-RS or a second TCI state that includes another one of multiple possible triggers for the A-CSI-RS.

~~74.~~ 60. The apparatus of claim ~~64~~50, wherein the active transmission configuration state is at least one of configured by radio resource control (RRC) message

or further indicated or down selected by a media access control (MAC) control element (CE) for the reference signal.

~~75.~~ 61. The apparatus of claim ~~74~~60, wherein the one or more processors are configured to generate the ~~one or more configurations~~response at least in part by indicating ~~the active transmission configuration state as one of~~ the one or more active transmission configuration states based on detecting a distinct transmission configuration identifier or a distinct quasi-colocation (QCL) type of the active transmission configuration state.

~~76.~~ 62. The apparatus of claim ~~64~~50, wherein the one or more ~~configurations of~~ active transmission configuration states correspond to selected transmission configuration states indicated in at least one of a media access control (MAC) control element (CE) or a radio resource control (RRC) signal sent to the UE and related to at least one of a downlink control channel or a downlink shared channel.

~~77.~~ 63. An apparatus for wireless communication, comprising:

means for receiving, from a user equipment (UE), a message comprising data corresponding to one or more transmission configuration states supported by the UE for detecting downlink beamformed signals;

means for generating, based, at least in part, on the message, a response corresponding to one or more active transmission configuration states, wherein an active transmission configuration state of the one or more active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

means for transmitting the response to the UE.

~~78. The apparatus of claim 77, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.~~

~~79. The apparatus of claim 77, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.~~

~~80. The apparatus of claim 77, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).~~

~~81. The apparatus of claim 80, wherein the A-CSI-RS is in one transmission configuration state selected by a media access control (MAC) control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.~~

~~82. The apparatus of claim 77, wherein the multiple possible triggers have different transmission configuration states for the reference signal.~~

~~83. The apparatus of claim 77, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.~~

~~84. The apparatus of claim 77, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.~~

64. ~~85.~~ A non-transitory computer-readable medium, comprising code executable by one or more processors for wireless communications, the code comprising:

code for receiving, from a user equipment (UE), a message comprising data corresponding to one or more transmission configuration states supported by the UE for detecting downlink beamformed signals;

code for generating, based, at least in part, on the message, a response corresponding to one or more active transmission configuration states, wherein an active transmission configuration state of the one or more active transmission configuration states corresponds to, for a selected transmission configuration state, one of multiple possible triggers for a reference signal; and

code for transmitting the response to the UE.

~~86. The computer-readable medium of claim 85, wherein the data is indicative, at least in part, of one or more transmission configuration indicator (TCI) states corresponding to the one or more transmission configuration states.~~

~~87. The computer-readable medium of claim 85, wherein the data is indicative, at least in part, of a number of the one or more transmission configuration states.~~

~~88. The computer-readable medium of claim 85, wherein the reference signal comprises an aperiodic channel state information reference signal (A-CSI-RS).~~

~~89. The computer-readable medium of claim 88, wherein the A-CSI-RS is in one transmission configuration state selected by a media access control (MAC) control element (CE) or radio resource control (RRC) for physical downlink control channel (PDCCH) or physical downlink shared channel (PDSCH) transmission.~~

~~90. The computer-readable medium of claim 85, wherein the multiple possible triggers have different transmission configuration states for the reference signal.~~

~~91. The computer-readable medium of claim 85, wherein the response is indicative, at least in part, of one or more configurations of the one or more active transmission configuration states.~~

~~92. The computer-readable medium of claim 85, wherein the response is indicative, at least in part, of one or more active transmission configuration indicator (TCI) states corresponding to the one or more active transmission configuration states.~~

~~93.~~ 65. A method of wireless communication, comprising:

indicating a capability of a number of transmission configuration indicator (TCI) states supported for detecting downlink beamformed signals;

receiving, from at least an access point and based on the capability, one or more configurations of active TCI states;

processing the one or more configurations to determine the active TCI states, wherein at least one of the active TCI states in the one or more configurations corresponds to a trigger state for transmitting a given aperiodic channel state information reference signal (A-CSI-RS) and at least another one of the active TCI states in the one or more configurations corresponds to, for a selected TCI state, a different trigger state for transmitting the given A-CSI-RS; and

detecting, based on processing the one or more configurations, one or more downlink beamformed signals received from the access point.