CLAIMS

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

1.~~——~~ A method ~~for~~of wireless ~~communications from a~~ communication, the method comprising: establishing, by a user equipment (UE), ~~comprising:~~

~~———~~ ~~determining resources to monitor for radio link monitoring (RLM) prior to being configured with resources to monitor for RLM after establishing a~~ a radio resource control (RRC) connection with a network; ~~and~~

~~———~~determining, by the UE, while the UE is in RRC-CONNECTED mode and prior to being configured by the network with radio link monitoring reference signal (RLM-RS) resources, default RLM-RS resources based on synchronization signal (SS) block (SSB) reference signals or channel state information references signals (CSI-RS); and performing, by the UE, RLM based on the ~~determined~~default RLM-RS resources.

2.~~——~~ The method of claim 1, wherein determining the ~~determined~~default RLM-RS resources ~~comprise~~comprises selecting one ~~or more beams measured and reported during a random access channel (RACH) procedure.~~among the SSB reference signals and the CSI-RS as the default RLM-RS.

3.~~——~~ The method of claim ~~2~~1, wherein: determining the default RLM-RS resources is based on one or more ~~beams are reported in a first uplink message after a random access preamble transmission~~control resource sets (CORESETs) and search spaces.

4. The method of claim 3, wherein ~~the first uplink message is a RRC Connection Request message.~~

~~4.——— The method of claim 2~~determining the default RLM-RS resources is based on reference signals associated with spatial quasi-colocation (QCL) parameters in a transmission configuration indication (TCI) state of the one or more configured CORESETs.

5. The method of claim 4, further comprising receiving the QCL parameters in the TCI state of the one or more configured CORESETs from the network.

6. The method of claim 4, wherein the ~~one or more beams comprise one or more beams used during a random access response (RAR) message transmission.~~reference signals associated with spatial QCL parameters in the TCI state of the one or more configured CORESETs correspond to the SSB reference signals or the CSI-RS.

~~5.~~ 7. The method of claim 4, wherein~~:~~

~~the UE reports, in a first uplink message after the RAR message, one more preferred beams~~ determining the default RLM-RS resources comprises determining the SSB reference signals or the CSI-RS associated with the spatial QCL parameters in the TCI states of the one or more ~~beams used for the RAR message; and~~

~~a subsequent downlink message, after the RAR message, is transmitted using one of the reported beams.~~

~~6. The method of claim 2, wherein:~~

~~the beam determined during initial access is used for a random access response (RAR) transmission and is used as the determined resource if beam reporting in a RRC Connection Request) message is not present.~~

~~7. The method of claim 1, wherein:~~

~~the UE determines the resources to monitor for RLM while the UE is in RRC-CONNECTED mode and configured with one or more control resource sets (CORESETs) and search spaces, but before being configured with RLM reference signals (RSs).~~

~~8. The method of claim 7, wherein the resources to monitor for RLM comprise reference signal (RS) resources associated with spatial quasi-colocation (QCL) parameters in a transmission configuration indication (TCI) state associated with the one or more configured CORESETs.~~

~~9. The method of claim 8, wherein:~~

~~when the UE is configured with M CORESETs after a random access channel (RACH) procedure, the UE uses M RLM-RSs to replace a previous N RLM-RSs that were measured and reported during the RACH procedure.~~

~~10. The method of claim 9, wherein:~~

~~N is greater than M; and~~

~~M RLM-RS replace only a subset of N~~configured CORESETs as the default RLM-RSs ~~based on one or more criteria.~~

~~11. The method of claim 1, further comprising:~~

~~determining an RS is a default RLM-RS; and~~

~~transmitting, using a network (NW), the RLM-RS with a known pattern periodically in response to the determination~~.

~~12.~~ 8. The method of claim 1, further comprising:

utilizing, by the UE, a first set of parameters for RLM and Radio Link Failure (RLF) process prior to being configured with RLM-RS resources ~~to monitor for RLM~~ after establishing a ~~radio resource control (~~RRC~~)~~ connection with ~~a~~the network; and

updating, by the UE, one or more of the first set of parameters for RLM and RLF process after establishing a radio resource control (RRC) connection with ~~a~~the network.

~~13.~~ 9. The method of claim ~~12~~8, wherein updating the one or more of the first parameters comprises increasing or decreasing the one or more of the first parameters by a fixed amount.

~~14.~~ 10. An apparatus for wireless ~~communications from a user equipment (UE),~~communication, comprising:

~~means for determining resources to monitor for radio link monitoring (RLM) prior to being configured with resources to monitor for RLM after~~ means for establishing a radio resource control (RRC) connection with a network; ~~and~~

~~means for performing RLM based on the determined resources.~~

~~15. The apparatus of claim 14~~means for determining, while the apparatus is in RRC-CONNECTED mode and prior to being configured by the network with radio link monitoring reference signal (RLM-RS) resources, default RLM-RS resources based on synchronization signal (SS) block (SSB) reference signals or channel state information

references signals (CSI-RS); and means for performing RLM based on the default RLM-RS resources.

11. The apparatus of claim 10, wherein the means for determining the default RLM-RS resources comprises means for selecting one among the SSB reference signals and the CSI-RS as the default RLM-RS.

12. The apparatus of claim 10, wherein: the means for determining the default RLM-RS resources is based on one or more control resource sets (CORESETs) and search spaces.

13. The apparatus of claim 12, wherein the means for determining the default RLM-RS resources is based on reference signals associated with spatial quasi-colocation (QCL) parameters in a transmission configuration indication (TCI) state of the one or more configured CORESETs.

14. The apparatus of claim 13, wherein the reference signals associated with spatial QCL parameters in the TCI state of the one or more configured CORESETs correspond to the SSB reference signals or the CSI-RS.

15. The apparatus of claim 13, wherein the means for determining the default RLM-RS resources comprises means for determining the SSB reference signals or the CSI-RS associated with the spatial QCL parameters in the TCI states of the one or more configured CORESETs as the default RLM-RSs.

16. An apparatus for wireless communication, comprising: at least one processor; a memory coupled with the at least one processor; and instructions stored in the memory and executable by the at least one processor to cause the apparatus to: establish a radio resource control (RRC) connection with a network; determine, while the apparatus is in RRC-CONNECTED mode and prior to being configured by the network with radio link monitoring reference signal (RLM-RS) resources, default RLM-RS resources based on synchronization signal (SS) block (SSB) reference signals or channel state information references signals (CSI-RS); and perform RLM based on the default RLM-RS resources.

17. The apparatus of claim 16, wherein the ~~determined resources comprise~~instructions are further executable by the at least one ~~or more beams measured~~processor to cause the apparatus to select one among the SSB reference signals and ~~reported during a random access channel (RACH) procedure.~~the CSI-RS as the default RLM-RS.

~~16.~~ 18. The apparatus of claim ~~15~~16, wherein the instructions are further executable by the at least one processor to cause the apparatus to determine the default RLM-RS resources based on one or more control resource sets (CORESETs) and search spaces.

19. The apparatus of claim 18, wherein the instructions are further executable by the at least one processor to cause the apparatus to determine the default RLM-RS resources based on reference signals associated with spatial quasi-colocation (QCL) parameters in a transmission configuration indication (TCI) state of the one or more ~~beams are reported in a first uplink message after a random access preamble transmission, wherein the first uplink message is a RRC Connection Request message.~~

~~17. The apparatus of claim 15, wherein the one or more beams comprise one or more beams used during a random access response (RAR) message transmission.~~

~~18. The apparatus of claim 17, wherein:~~

~~the UE reports, in a first uplink message after the RAR message, one more preferred beams of the one or more beams used for the RAR message; and~~

~~a subsequent downlink message, after the RAR message, is transmitted using one of the reported beams.~~configured CORESETs.

~~19.~~ 20. The apparatus of claim ~~15, wherein:~~

~~the beam determined during initial access is used for a random access response (RAR) transmission and is used as the determined resource if beam reporting in a RRC Connection Request) message is not present.~~19, wherein the instructions are further executable by the at least one processor to cause the apparatus to receive the QCL parameters in the TCI state of the one or more configured CORESETs from the network.

~~20.~~ 21. The apparatus of claim ~~14~~19, wherein~~:~~

the UE determines reference signals associated with spatial QCL parameters in the resources to monitor for RLM whileTCI state of the UE is in RRC-CONNECTED mode and configured with one or more control resource sets (configured CORESETs) and search spaces, but before being configured with RLM correspond to the SSB reference signals (RSs).or the CSI-RS.

21. 22. The apparatus of claim 20, wherein the resources to monitor for RLM comprise reference signal (RS) resources associated with spatial quasi-colocation (QCL) parameters in a transmission configuration indication (TCI) state associated with the one or more configured CORESETs.

22. The apparatus of claim 21, wherein:

when the UE is configured with M CORESETs after a random access channel (RACH) procedure, the UE uses M RLM-RSs to replace a previous N RLM-RSs that were measured and reported during the RACH procedure.

23. The apparatus of claim 22, wherein:

N is greater than M; and

M RLM-RS replace only a subset of N RLM-RSs based on one or more criteria.

24. The apparatus of claim 14, further comprising:

means for determining an RS is a default RLM-RS; and

means for transmitting, using a network (NW), the RLM-RS with a known pattern periodically in response to the determination.

25. The apparatus of claim 14, further comprising:

means for utilizing a first set of parameters for RLM and Radio Link Failure (RLF) process prior to being configured with resources19, wherein the instructions are further executable by the at least one processor to monitor for RLM after establishing a radio resource control (RRC) connection with a network; and

means for updating one or more of the first set of parameters for RLM and RLF process after establishing a radio resource control (RRC) connection with a network.

~~26. The apparatus of claim 25, wherein means for updating one or more of the first parameters comprises means for increasing or decreasing one or more of the first parameters by a fixed amount.~~

~~27. An apparatus for wireless communications from a user equipment (UE), comprising:~~

~~at least one processor configured~~ cause the apparatus to determine ~~resources to monitor for radio link monitoring (RLM) prior to being configured with resources to monitor for RLM after establishing a radio resource control (RRC) connection with a network and to perform RLM based on the determined resources; and~~

~~a memory coupled with the at least one processor.~~

~~28. A computer readable medium having instructions stored thereon for:~~

~~determining resources to monitor for radio link monitoring (RLM) prior to being~~ the SSB reference signals or the CSI-RS associated with the spatial QCL parameters in the TCI states of the one or more configured ~~with resources to monitor for RLM after establishing a radio resource control (RRC) connection with a network; and~~

~~performing RLM based on the determined resources.~~

CORESETs as the default RLM-RSs.