CLAIMS

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

1. ~~——~~A method of wireless communication at a User Equipment (UE), comprising:

receiving, from a base station, an indication of resources in time and frequency ~~from a base station~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~

~~transmitting uplink NOMA communication to the base station based on the indication of resources received from the base station.~~

~~2. The method of claim 1, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.~~

~~3. The method of claim 1,~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on ~~a predefined function, wherein the predefined function specifies~~ at least one of a center frequency of an NA-RU~~, a subcarrier spacing,~~ or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and transmitting uplink NOMA communication to the base station based on the indication of resources received from the base station.

~~4. ——~~2. The method of claim ~~3~~1, wherein the indication of resources is based on a ~~bitmap~~NOMA raster of candidate locations for the ~~set of~~ NA-RUs ~~mapped to a time frequency resource grid and indexed in a sequential order~~.

~~5. ——~~3. The method of claim 1, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~6. ——~~4. The method of claim 1, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~7. ——~~5. The method of claim 1, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~8. ——~~6. The method of claim 1, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~9.~~ 7. The method of claim 1, wherein the uplink NOMA communication is transmitted to the base station, and multiple UEs share the set of the NA-RUs in a time and frequency domain.

~~10.~~ 8. A method of wireless communication at a base station, comprising:

transmitting, to a User Equipment (UE), an indication of resources in time and frequency ~~to a User Equipment (UE)~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~

~~receiving uplink NOMA communication from the UE based on the indication of resources transmitted to the UE.~~

~~11. The method of claim 10, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.~~

~~12. The method of claim 10,~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on ~~a predefined function, wherein the predefined function specifies~~ at least one of a center frequency of an NA-RU~~, a subcarrier spacing,~~ or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and receiving uplink NOMA communication from the UE based on the indication of resources transmitted to the UE.

~~13.~~ 9. The method of claim ~~12~~8, wherein the indication of resources is based on a ~~bitmap~~NOMA raster of candidate locations for the ~~set of~~ NA-RUs ~~mapped to a time frequency resource grid and indexed in a sequential order~~.

~~14.~~ 10. The method of claim ~~10~~8, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~15.~~ 11. The method of claim ~~10~~8, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~16.~~ 12. The method of claim ~~10~~8, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~17.~~ 13. The method of claim ~~10~~8, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~18.~~ 14. The method of claim ~~10~~8, wherein the uplink NOMA communication is received from the UE, and multiple UEs share the set of the NA-RUs in a time and frequency domain.

~~19. A method of wireless communication at a User Equipment (UE), comprising:~~

~~receiving downlink control information (DCI) or a Radio Resource Control (RRC) based semi-static uplink resource grant from a base station allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the DCI or a payload of RRC signaling is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and~~

~~transmitting uplink NOMA communication to the base station based on the DCI or a RRC based semi-static uplink resource grant received from the base station.~~

~~20. The method of claim 19, wherein the DCI is received based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.~~

~~21. The method of claims 19 or 20, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.~~

~~22. The method of claims 19 or 20, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.~~

~~23. The method of claim 22, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

~~24. The method of claim 19, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.~~

~~25. The method of claim 19, further comprising:~~

~~receiving a compact DCI signaled by physical downlink control channel (PDCCH) or a compressed uplink resource grant signaled by a Radio Resource Control (RRC).~~

~~26. The method of claim 25, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.~~

~~27. The method of claim 25, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.~~

~~28. The method of claim 27, wherein the compressed uplink resource grant comprises an index of at least one transport format that is received through RRC signaling.~~

~~29. A method of wireless communication at a base station, comprising:~~

~~transmitting downlink control information (DCI) or a Radio Resource Control (RRC) based semi-static uplink resource grant to a User Equipment (UE) allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein a payload of the DCI or the semi-static uplink resource grant is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and~~

~~receiving uplink NOMA communication from the UE.~~

~~30. The method of claim 29, wherein the DCI is transmitted based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.~~

~~31. The method of claims 29 or 30, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.~~

~~32. The method of claims 29 or 30, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.~~

~~33. The method of claim 32, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

~~34. The method of claim 29, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.~~

~~35. The method of claim 29, further comprising:~~

~~transmitting a compressed uplink resource grant by Radio Resource Control (RRC) signaling or a compact DCI by a physical downlink control channel (PDCCH).~~

~~36. The method of claim 35, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.~~

~~37. The method of claim 35, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.~~

~~38. The method of claim 37, wherein the compressed uplink resource grant comprises an index of at least one transport format that is transmitted through RRC signaling.~~

~~39.~~ 15. An apparatus for wireless communication, comprising:

means for receiving, from a base station, an indication of resources in time and frequency ~~from a base station~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs

mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and means for transmitting uplink NOMA communication to the base station based on the indication of resources received from the base station.

~~40.~~ 16. The apparatus of claim ~~39~~15, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.

~~41. The apparatus of claim 39, wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on a predefined function, wherein the predefined function specifies at least one of a center frequency of an NA-RU, a subcarrier spacing, or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs.~~

~~42. The apparatus of claim 41, wherein the indication of resources is based on a bitmap for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order.~~

~~43. The apparatus of claim 39~~17. The apparatus of claim 15, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~44.~~ 18. The apparatus of claim ~~39~~15, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~45.~~ 19. The apparatus of claim ~~39~~15, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~46.~~ 20. The apparatus of claim ~~39~~15, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~47.~~ 21. The apparatus of claim ~~39~~15, wherein the uplink NOMA communication is transmitted to the base station, and multiple UEs share the set of the NA-RUs in a time and frequency domain.

~~48.~~ 22. An apparatus for wireless communication, comprising:

a memory; and

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

receive, from a base station, an indication of resources in time and frequency ~~from a base station~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and transmit uplink NOMA communication to the base station based on the indication of resources received from the base station.

~~transmit uplink NOMA communication to the base station based on the indication of resources received from the base station.~~

~~49.~~ 23. The apparatus of claim ~~48~~22, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.

~~50. The apparatus of claim 48, wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on a predefined function, wherein the predefined function specifies at least one of a center frequency of an NA-RU, a subcarrier spacing, or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs.~~

~~51. The apparatus of claim 50, wherein the indication of resources is based on a bitmap for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order.~~

~~52. The apparatus of claim 48~~24. The apparatus of claim 22, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~53.~~ 25. The apparatus of claim ~~48~~22, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~54.~~ 26. The apparatus of claim ~~48~~22, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~55.~~ 27. The apparatus of claim ~~48~~22, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~56.~~ 28. The apparatus of claim ~~48~~22, wherein the uplink NOMA communication is transmitted to the base station, and multiple UEs share the set of the NA-RUs in a time and frequency domain.

~~57. A~~29. A non-transitory computer-readable medium storing computer executable code, comprising code to:

receive, from a base station, an indication of resources in time and frequency ~~from a base station~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and transmit uplink NOMA communication to the base station based on the indication of resources received from the base station.

~~transmit uplink NOMA communication to the base station based on the indication of resources received from the base station.~~

~~58.~~ 30. An apparatus for wireless communication, comprising:

means for transmitting, to a User Equipment (UE), an indication of resources in time and frequency ~~to a User Equipment (UE)~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and means for receiving uplink NOMA communication from the UE based on the indication of resources transmitted to the UE.

~~59.~~ 31. The apparatus of claim ~~58~~30, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.

~~60. The apparatus of claim 58, wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on a predefined function, wherein the predefined function specifies at least one of a center~~

~~frequency of an NA-RU, a subcarrier spacing, or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs.~~

~~61. The apparatus of claim 60, wherein the indication of resources is based on a bitmap for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order.~~

~~62. The apparatus of claim 58~~32. The apparatus of claim 30, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~63.~~ 33. The apparatus of claim ~~58~~30, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~64.~~ 34. The apparatus of claim ~~58~~30, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~65.~~ 35. The apparatus of claim ~~58~~30, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~66.~~ 36. The apparatus of claim ~~58~~30, wherein the uplink NOMA communication is received from the UE, and multiple UEs share the set of the NA-RUs in a time and frequency domain.

~~67.~~ 37. An apparatus for wireless communication, comprising:

a memory; and

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

transmit, to a User Equipment (UE), an indication of resources in time and frequency ~~to a User Equipment (UE)~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~); and~~

), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and receive uplink NOMA communication from the UE based on the indication of resources transmitted to the UE.

~~68.~~ 38. The apparatus of claim ~~67~~37, wherein the indication of resources is based on a NOMA raster of candidate locations for the NA-RUs.

~~69. The apparatus of claim 67, wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on a predefined function, wherein the predefined function specifies at least one of a center frequency of an NA-RU, a subcarrier spacing, or a number of physical resource blocks (PRBs) within each NA-RU in the set of NA-RUs.~~

~~70. The apparatus of claim 69, wherein the indication of resources is based on a bitmap for the set of NA-RUs mapped to a time frequency resource grid and indexed in a sequential order.~~

~~71. The apparatus of claim 67~~39. The apparatus of claim 37, wherein the indication comprises a starting location of the set of the NA-RUs and a number of the NA-RUs comprised in the set.

~~72.~~ 40. The apparatus of claim ~~67~~37, wherein the indication comprises a starting location of the set of the NA-RUs and an ending location of the set of the NA-RUs.

~~73.~~ 41. The apparatus of claim ~~67~~37, wherein the set of the NA-RUs comprise a number of NA-RUs that are contiguous in time or frequency.

~~74.~~ 42. The apparatus of claim ~~67~~37, wherein the set of the NA-RUs are interlaced in time or frequency within a resource grid spanning a system bandwidth in frequency and at least one slot in time.

~~75.~~ 43. The apparatus of claim ~~67~~37, wherein the uplink NOMA communication is received from the UE, and multiple UEs share the same NR-RUs in time and frequency domain.

~~76. A~~44. A non-transitory computer-readable medium storing computer executable code, comprising code to:

transmit, to a User Equipment (UE), an indication of resources in time and frequency ~~to a User Equipment (UE)~~ allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein the indication of resources comprises a set of NOMA resource units (NA-RUs~~);~~), wherein the set of NA-RUs are mapped to a time frequency resource grid with respect to a synchronization signal block (SSB) based on at least one of a center frequency of an NA-RU or a number of physical resource blocks (PRBs) within each NA-RU in

the set of NA-RUs, wherein the indication of resources is based on a mapping index for the set of NA-RUs mapped to a time frequency resource grid and

indexed in a sequential order, wherein the mapping index maps at least one of the set of NA-RUs to the time frequency resource grid; and receive uplink NOMA communication from the UE based on the indication of resources transmitted to the UE.

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

~~means for receiving downlink control information (DCI) or a Radio Resource Control (RRC) based semi-static uplink resource grant from a base station allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the DCI or the payload of RRC signaling is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and~~

~~means for transmitting uplink NOMA communication to the base station based on the DCI or a RRC based semi-static uplink resource grant received from the base station.~~

~~78. The apparatus of claim 77, wherein the DCI is received based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.~~

~~79. The apparatus of claims 77 or 78, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.~~

~~80. The apparatus of claims 77 or 78, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.~~

~~81. The apparatus of claim 80, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

82. The apparatus of claim 77, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.

83. The apparatus of claim 77, further comprising:

means for receiving a compact DCI signaled by physical downlink control channel (PDCCH) or a compressed uplink resource grant signaled by a Radio Resource Control (RRC).

84. The apparatus of claim 83, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.

85. The apparatus of claim 83, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.

86. The apparatus of claim 85, wherein the compressed uplink resource grant comprises an index of at least one transport format that is received through RRC signaling.

87. An apparatus for wireless communication, comprising:

a memory; and

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

receive downlink control information (DCI) or a Radio Resource Control (RRC) based semi-static uplink resource grant from a base station allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the DCI or the payload of RRC signaling is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and

transmit uplink NOMA communication to the base station based on the DCI or a RRC-based semi-static uplink resource grant received from the base station.

88. The apparatus of claim 87, wherein the DCI is received based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.

~~89. The apparatus of claims 87 or 88, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.~~

~~90. The apparatus of claims 87 or 88, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.~~

~~91. The apparatus of claim 90, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

~~92. The apparatus of claim 87, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.~~

~~93. The apparatus of claim 87, further comprising:~~

~~receiving a compact DCI signaled by physical downlink control channel (PDCCH) or a compressed uplink resource grant signaled by a Radio Resource Control (RRC).~~

~~94. The apparatus of claim 93, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.~~

~~95. The apparatus of claim 93, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.~~

~~96. The apparatus of claim 95, wherein the compressed uplink resource grant comprises an index of at least one transport format that is received through RRC signaling.~~

97. A computer-readable medium storing computer executable code, comprising code to:

receive downlink control information (DCI) or a Radio Resource Control (RRC)-based semi-static uplink resource grant from a base station allocated for Non-Orthogonal Multiple Access (NOMA) communication with the base station, wherein the DCI or the payload of RRC signaling is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and

transmit uplink NOMA communication to the base station based on the DCI or a RRC-based semi-static uplink resource grant received from the base station.

98. An apparatus for wireless communication, comprising:

means for transmitting downlink control information (DCI) or a Radio Resource Control (RRC)-based semi-static uplink resource grant to a User Equipment (UE) allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein a payload of the DCI or the semi-static uplink resource grant is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and

means for receiving uplink NOMA communication from the UE.

99. The apparatus of claim 98, wherein the DCI is transmitted based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.

100. The apparatus of claims 98 or 99, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.

101. The apparatus of claims 98 or 99, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.

~~102. The apparatus of claim 101, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

~~103. The apparatus of claim 98, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.~~

~~104. The apparatus of claim 98, further comprising:~~

~~means for transmitting a compressed uplink resource grant by Radio Resource Control (RRC) signaling or a compact DCI by a physical downlink control channel (PDCCH).~~

~~105. The apparatus of claim 104, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.~~

~~106. The apparatus of claim 104, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.~~

~~107. The apparatus of claim 106, wherein the compressed uplink resource grant comprises an index of at least one transport format that is transmitted through RRC signaling.~~

~~108. An apparatus for wireless communication, comprising:~~

~~a memory; and~~

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

~~transmit downlink control information (DCI) or a Radio Resource Control (RRC) based semi-static uplink resource grant to a User Equipment (UE) allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein a payload of the DCI or the semi-static uplink resource grant is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and~~

~~receive uplink NOMA communication from the UE.~~

~~109. The apparatus of claim 108, wherein the DCI is transmitted based on at least one of a group common control channel or Remaining Minimum System Information (RMSI) for a common resource allocation.~~

~~110. The apparatus of claims 108 or 109, wherein the DCI or the payload of RRC signaling comprises a cyclic redundancy check (CRC) that is scrambled by the NOMA group RNTI.~~

~~111. The apparatus of claims 108 or 109, wherein the DCI or the payload of RRC signaling comprises one or more NOMA transmission parameters indicated by the extended MCS table.~~

~~112. The apparatus of claim 111, wherein the one or more NOMA transmission parameters comprise at least one of a spreading factor for a NOMA transmission, a seed of scrambling code for the NOMA transmission, and one or more layers for multiple branch transmission of the NOMA transmission.~~

~~113. The apparatus of claim 108, wherein the DCI comprises a multiple stage DCI scrambled by the NOMA group RNTI.~~

~~114. The apparatus of claim 108, further comprising:~~

~~transmitting a compressed uplink resource grant by Radio Resource Control (RRC) signaling or a compact DCI by a physical downlink control channel (PDCCH).~~

~~115. The apparatus of claim 114, wherein the compressed uplink resource grant is based on a table of NOMA transport formats.~~

~~116. The apparatus of claim 114, wherein the compressed uplink resource grant indicates an index for a transport format from among multiple transport formats for the uplink NOMA communication.~~

~~117. The apparatus of claim 116, wherein the compressed uplink resource grant comprises an index of at least one transport format that is transmitted through RRC signaling.~~

~~118. A computer-readable medium storing computer executable code, comprising code to:~~

~~transmit downlink control information (DCI) or a Radio Resource Control (RRC)-based semi-static uplink resource grant to a User Equipment (UE) allocated for Non-Orthogonal Multiple Access (NOMA) communication with the UE, wherein a payload of the DCI or the semi-static uplink resource grant is scrambled with a NOMA group Radio Network Temporary Identifier (RNTI) or comprises NOMA transmission parameters indicated by an extended modulation and coding scheme (MCS) table; and~~

~~receive uplink NOMA communication from the UE.~~