

What is claimed is:

1. A random access method for a terminal device, comprising:

transmitting a random access message 1;

wherein a payload part is carried in the random access message 1, and the payload part is acquired through performing modulation and coding according to a target modulation and coding scheme (MCS),

wherein prior to transmitting the random access message 1, the random access method further comprises:

acquiring an MCS set; and

~~selecting the target MCS from the MCS set.~~

selecting the target MCS from the MCS set according to a signal measurement result and/or a payload size of the random access message 1,

characterized in that uplink control information, UCI, is carried in the random access message 1, the UCI is used to explicitly indicate the target MCS;

or

a demodulation reference signal, DMRS, is carried in the random access message 1, the DMRS is used to implicitly indicate the target MCS.

2. The random access method according to claim 1, wherein the MCS set is a predefined MCS set, or an MCS set indicated by a system broadcasting message or high-layer signaling.

~~3. The random access method according to claim 1, wherein the selecting the target MCS from the MCS set comprises:~~

~~selecting the target MCS from the MCS set according to a signal measurement result and/or a payload size of the random access message 1.~~

~~34. The random access method according to claim 1, wherein uplink control information (UCI) is carried in the random access message 1, the UCI is used to explicitly indicate the target MCS;~~

~~or—~~

~~a demodulation reference signal (DMRS) is carried in the random access message 1, the DMRS is used to implicitly indicate the target MCS;—~~

~~or—~~

a preamble is carried in the random access message 1, and the preamble and/or a Physical Random Access Channel (PRACH) occasion corresponding to the preamble are used to implicitly indicate the target MCS.

45. The random access method according to claim 41, wherein the UCI is modulated and coded through using a predefined MCS or an MCS configured by a network device.

56. The random access method according to claim 14, wherein a configuration parameter of the DMRS is configured by the network device, and comprises a plurality of DMRS configurations or a plurality of DMRS sequences.

67. The random access method according to claim 56, wherein when the configuration parameter of the DMRS comprises number a of DMRS configurations, one or number b of DMRS configurations are associated with one MCS in the MCS set; or

when the configuration parameter of the DMRS comprises number c of DMRS sequences, one or number d of DMRS sequences are associated with one MCS in the MCS set;

wherein the number a, the number b, the number c and the number d are each a positive integer greater than 1, the number b is smaller than or equal to the number a, and the number d is smaller than or equal to the number c.

78. The random access method according to claim 43, wherein an association relationship between the preamble and the target MCS is configured by the network device, and one or more preambles are associated with one MCS in the MCS set.

89. The random access method according to claim 43, wherein an association relationship between the PRACH occasion and the target MCS is configured by the network device, and one or more PRACH occasions are associated with one MCS in the MCS set.

940. A random access method for a network device, comprising:
receiving a random access message 1;
wherein a payload part is carried in the random access message 1, and the payload part is acquired through performing modulation and coding according to a target MCS, and the target MCS is selected by terminal device from the MCS set according to a signal measurement result and/or a payload size of the random access message 1,
characterized in that subsequent to receiving the random access message 1, the random access method further comprises any one of:
acquiring the target MCS according to UCI carried in the random access message 1;
acquiring the target MCS according to a DMRS carried in the random access message 1,
wherein the UCI is used to explicitly indicate the target MCS, the DMRS is used to implicitly indicate the target MCS.

~~104. The random access method according to claim 940, wherein when the target MCS is selected from a MCS set, subsequent to receiving the random access message 1, the random access method further comprises: any one of:—
acquiring the target MCS according to UCI carried in the random access message 1;—
acquiring the target MCS according to a DMRS carried in the random access message 1;—
acquiring the target MCS according to a preamble carried in the random access message 1 and/or a PRACH occasion corresponding to the preamble;
wherein UCI is used to explicitly indicate the target MCS, the DMRS is used to implicitly indicate the target MCS, and the PRACH occasion corresponding to the preamble is used to implicitly indicate the target MCS.~~

1142. A terminal device, comprising:
a transmission module, configured to transmit a random access message 1;
wherein a payload part is carried in the random access message 1, and the payload part is acquired through performing modulation and coding according to a target MCS,

wherein the terminal device further comprises:

a first acquisition module configured to acquire an MCS set;

a selection module configured to select the target MCS from the MCS set according to a signal measurement result and/or a payload size of the random access message 1, select the target MCS from the MCS set characterized in that uplink control information, UCI, is carried in the random access message 1, the UCI is used to explicitly indicate the target MCS;

or

a demodulation reference signal, DMRS, is carried in the random access message 1, the DMRS is used to implicitly indicate the target MCS.

1213. The terminal device according to claim 1211, wherein the MCS set is a predefined MCS set, or an MCS set indicated by a system broadcasting message or high-layer signaling.

~~14. The terminal device according to claim 12, wherein the selection module is further configured to:~~

~~select the target MCS from the MCS set according to a signal measurement result and/or a payload size of the random access message 1.~~

~~135. The terminal device according to claim 1211, wherein uplink control information, UCI, is carried in the random access message 1, the UCI is used to explicitly indicate the target MCS;~~

~~or~~

~~a DMRS is carried in the random access message 1, the DMRS is used to implicitly indicate the target MCS;~~

~~or~~

a preamble is carried in the random access message 1, and the preamble and/or a Physical Random Access Channel, PRACH, occasion corresponding to the preamble are used to implicitly indicate the target MCS.

146. The terminal device according to claim 151, wherein the UCI is modulated and coded through using a predefined MCS or an MCS configured by a network device.

157. The terminal device according to claim 151, wherein a configuration parameter of the DMRS is configured by the network device, and comprises a plurality of DMRS configurations or a plurality of DMRS sequences.

168. A network device, comprising:

a reception module, configured to receive a random access message 1;

wherein a payload part is carried in the random access message 1, and the payload part is acquired through performing modulation and coding according to a target MCS, and the target MCS is selected by terminal device from the MCS set according to a signal measurement result and/or a payload size of the random access message 1,

characterized in that the network device further comprises a second acquisition module configured to, when the target MCS is selected from the MCS set, perform any one of following operations:

acquiring the target MCS according to UCI carried in the random access message 1;

acquiring the target MCS according to a DMRS carried in the random access message 1,

wherein the UCI is used to explicitly indicate the target MCS, the DMRS is used to implicitly indicate the target MCS.

179. A communication device, comprising a memory, a processor, and a computer program stored in the memory and capable of being executed by the processor, wherein the computer program is configured to be executed by the processor to implement the step of the random access method according to any one of claims 1 to 89, or implement the step of the random access method according to claim 99 or 101.

2018. A computer-readable storage medium storing therein a computer program, wherein the computer program is configured to be executed by a processor, to implement the step of the

random access method according to any one of claims 1 to 89, or implement the step of the random access method according to claim 94 or 104.