

CLAIMS

1. A resource indicating method, wherein the method comprises:

receiving (S402), by a terminal, configuration information sent by an access network device, wherein the configuration information comprises time domain resource grouping information indicating a time domain distribution of at least one group of time domain resource units;

receiving (S404), by the terminal, resource indication information sent by the access network device; and

determining (S405), by the terminal, a time domain resource unit used by the terminal according to the time domain resource grouping information.

~~2. The method according to claim 1, wherein,~~

the configuration information comprises first time domain resource grouping information indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units is associated with one assigned type of signal;

or,

the configuration information comprises first time domain resource grouping information and second time domain resource grouping information; wherein the first time domain resource grouping information indicates a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units corresponds to one assigned type of signal; and the second time domain resource grouping information indicates a time domain distribution of at least one group of common time domain resource units.

~~3. The method according to claim 2, wherein,~~

the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal.

wherein the assigned type of signal is all or part of signals in a synchronization signal block, SS block.

2. The method according to claim 1, wherein the receiving, by the terminal, the configuration information sent by the access network device comprises:

receiving, by the terminal, the configuration information through a first control

message when the configuration information corresponds to a first type of resource,
wherein the first type of resource is a resource for downlink data transmission, a
resource for uplink data transmission, a resource for feeding back an
acknowledgement/negative-acknowledgment message in a hybrid automatic repeat
request, HARQ, process, a resource for transmitting a physical uplink control channel,
PUCCH, and a resource for non-contention access; and

the first control message is at least one of a physical broadcast channel, PBCH,
system information, SI, radio resource control, RRC, signaling, or a media access
control element, MAC CE.

3. The method according to claim 1, wherein the receiving (S402), by the
terminal, the configuration information sent by the access network device comprises:

receiving, by the terminal, the configuration information through a second
control message when the configuration information corresponds to a resource used
for contention access,

wherein the second control message is at least one of a PBCH or SI.

4. The method according to claim 1, wherein,

the time domain distribution of each group of time domain resource units in the
time domain resource grouping information is a time domain distribution of an uplink
time domain resource unit or a downlink time domain resource unit;

or,

the time domain distribution of each group of time domain resource units in the
time domain resource grouping information is a time domain distribution of an uplink
time domain resource unit and a downlink time domain resource unit.

5. A resource indicating apparatus, wherein the apparatus comprises:

a configuration receiving unit (1201), configured to receive configuration
information sent by an access network device, wherein the configuration information
comprises time domain resource grouping information indicating a time domain
distribution of at least one group of time domain resource units;

a first indication receiving unit (1202), configured to receive resource indication
information sent by the access network device; and

a resource determining unit (1203), configured to determine a time domain
resource unit used by a terminal according to the time domain resource grouping
information,

wherein,

the configuration information comprises first time domain resource grouping information indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units is associated with one assigned type of signal;

or,

the configuration information comprises first time domain resource grouping information and second time domain resource grouping information; wherein the first time domain resource grouping information indicates a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units corresponds to one assigned type of signal; and the second time domain resource grouping information indicates a time domain distribution of at least one group of common time domain resource units,

wherein,

the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal,

wherein the assigned type of signal is all or part of signals in a synchronization signal block, SS block.

6. The apparatus according to claim 5, wherein the configuration receiving unit (1201) is configured to:

receive the configuration information through a first control message when the configuration information corresponds to a first type of resource;

wherein the first type of resource is a resource for downlink data transmission, a resource for uplink data transmission, a resource for feeding back an acknowledgement/negative-acknowledgment message in a hybrid automatic repeat request, HARQ, process, a resource for transmitting a physical uplink control channel, PUCCH, and a resource for non-contention access; and

the first control message is at least one of a physical broadcast channel, PBCH, system information, SI, radio resource control, RRC, signaling, or a media access control element, MAC CE.

7. The apparatus according to claim 5, wherein the configuration receiving unit (1201) is configured to:

receive the configuration information through a second control message when the configuration information corresponds to a resource for contention access;

wherein the second control message is at least one of a PBCH and SI.

8. The apparatus according to claim 5, wherein,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit or a downlink time domain resource unit;

or,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit and a downlink time domain resource unit.

9. The apparatus according to claim 5, wherein the apparatus further comprises:

a correspondence receiving unit, configured to receive a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal sent by the access network device.

10. The apparatus according to claim 5, wherein the apparatus further comprise:

a first domain distribution determining unit, configured to determine a time domain distribution of one or more groups of assigned time domain resource units corresponding to an assigned type of signal, which is currently detected, as a currently used time domain distribution of time domain resource units.~~4. The method according to claim 2, wherein the method further comprises:~~

~~receiving, by the terminal, a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal sent by the access network device.~~

~~5. The method according to claim 3 or 4, wherein the method further comprises:~~

~~determining, by the terminal, a time domain distribution of one or more groups of assigned time domain resource units corresponding to an assigned type of signal, which is currently detected, as a currently used time domain distribution of time domain resource units; or~~

~~receiving, by the terminal, an activation indication sent by the access network device; and determining, by the terminal and according to the activation indication, a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource grouping information as a currently used time domain distribution of time domain resource units; or~~

~~receiving, by the terminal, a grouping selection indication sent by the access network device; and determining, by the terminal and according to the grouping~~

~~selection indication, a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource grouping information, or the time domain distribution of the at least one group of common time domain resource units, or a combination of a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource grouping information and the time domain distribution of the at least one group of common time domain resource units, as a currently used time domain distribution of time domain resource units.~~

6. The method according to claim 5, wherein the resource indication information comprises a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time domain; and the determining (S405), by the terminal, a time domain resource unit used by the terminal according to the time domain resource grouping information comprises:

~~determining, by the terminal, an Nth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal;~~

~~wherein N is the timing offset, and N is an integer.~~

7. The method according to claim 6, wherein the determining, by the terminal, an Nth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal comprises:

~~determining, by the terminal, an Nth uplink time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the time domain resource unit used by the terminal is an uplink time domain resource unit; and~~

~~determining, by the terminal, an Nth downlink time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the time domain resource unit used by the terminal is a downlink time domain resource unit.~~

8. The method according to claim 5, wherein the resource indication information does not comprise a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time

domain; and the determining (S405), by the terminal, a time domain resource unit used by the terminal according to the time domain resource grouping information comprises:

~~determining, by the terminal, an Mth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, wherein M is at least one of an integer obtained according to presetting, an integer obtained according to a network configuration, and an integer obtained according to presetting and a network configuration.~~

11. A resource indicating method, characterized in that the method comprises:

sending (S401), by an access network device, configuration information to a terminal, wherein the configuration information comprises time domain resource grouping information for indicating a time domain distribution of at least one group of time domain resource units; and

sending (S403), by the access network device, resource indication information to the terminal, wherein the resource indication information is used for indicating that the terminal determines a time domain resource unit used by the terminal according to the time domain resource grouping information,

wherein,

the configuration information comprises first time domain resource grouping information; wherein the first time domain resource grouping information is used for indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units is associated with one assigned type of signal;

or,

the configuration information comprises first time domain resource grouping information and second time domain resource grouping information; wherein the first time domain resource grouping information is used for indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units corresponds to one assigned type of signal; and the second time domain resource grouping information indicates a time domain distribution of at least one group of common time domain resource units;

wherein the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time

domain resource units and the assigned type of signal, and

wherein the assigned type of signal is all or part of signals in a synchronization signal block, SS block.

12. The method according to claim 11, wherein the sending, by an access network device, configuration information to a terminal comprises:

sending, by the access network device, the configuration information to the terminal through a first control message when the configuration information corresponds to a first type of resource;

wherein the first type of resource is a resource used for downlink data transmission, a resource used for uplink data transmission, a resource used for feeding back an acknowledgement/negative-acknowledgment message in a hybrid automatic repeat request, HARQ, process, a resource used for transmitting a physical uplink control channel, PUCCH, and a resource used for non-contention access; and

the first control message is at least one of a physical broadcast channel, PBCH, system information, SI, radio resource control, RRC, signaling, or a media access control element, MAC CE.

13. The method according to claim 11, wherein the sending, by an access network device, configuration information to a terminal comprises:

sending, by the access network device, the configuration information to the terminal through a second control message when the configuration information corresponds to a resource used for contention access;

wherein the second control message is at least one of a PBCH or SI.

14. The method according to claim 11, wherein,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit or a downlink time domain resource unit;

or,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit and a downlink time domain resource unit.

15. The method according to claim 11, further comprising:

sending an activation indication to the terminal, wherein the activation indication indicates that the terminal determines the time domain resource unit used by the terminal according to a time domain distribution of a group of assigned time domain

resource units in the first time domain resource grouping information; and

sending a grouping selection indication to the terminal,

wherein the grouping selection indication indicates that the terminal determines the time domain resource unit used by the terminal according to at least one of the following: a time domain distribution of a group of assigned time domain resource units in the first time domain resource grouping information, and the second time domain resource grouping information.

169. A resource indicating apparatus, wherein the apparatus comprises:

a configuration sending unit (1101), configured to send configuration information to a terminal, wherein the configuration information comprises time domain resource grouping information indicating a time domain distribution of at least one group of time domain resource units; and

a first indicating unit (1102), configured to send resource indication information to the terminal, wherein the resource indication information indicates that the terminal determines a time domain resource unit used by the terminal according to the time domain resource grouping information;

~~10. The apparatus according to claim 9, wherein,~~

the configuration information comprises first time domain resource grouping information indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units is associated with one assigned type of signal;

or,

the configuration information comprises first time domain resource grouping information and second time domain resource grouping information; wherein the first time domain resource grouping information indicates a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units corresponds to one assigned type of signal; and the second time domain resource grouping information indicates a time domain distribution of at least one group of common time domain resource units;

wherein,

the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal, and

wherein the assigned type of signal is all or part of signals in a synchronization

signal block, SS block.

1744. The apparatus according to claim ~~169~~ or 10, wherein the configuration sending unit (1101) is configured to:

send the configuration information to the terminal through a first control message when the configuration information corresponds to a first type of resource;

wherein the first type of resource is a resource for downlink data transmission, a resource for uplink data transmission, a resource for feeding back an acknowledgement/negative-acknowledgment message in a hybrid automatic repeat request, HARQ, process, a resource for transmitting a physical uplink control channel, PUCCH, and a resource for non-contention access; and

the first control message is at least one of a physical broadcast channel, PBCH, system information, SI, radio resource control, RRC, signaling, or a media access control element, MAC CE.

1842. The apparatus according to claim ~~169~~ or 10, wherein the configuration sending unit (1101) is configured to:

send the configuration information to the terminal through a second control message when the configuration information corresponds to a resource for contention access;

wherein the second control message is at least one of a PBCH and SI.

~~13. The apparatus according to claim 10, wherein,~~

~~the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal; or~~

~~the apparatus further comprises: a correspondence sending unit, configured to send a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal to the terminal.~~

~~14. The apparatus according to claim 13, wherein,~~

~~the assigned type of signal is all or part of signals in a synchronization signal block, SS block.~~

19. The apparatus according to claim 16, wherein,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit or a downlink time domain resource unit;

or,

the time domain distribution of each group of time domain resource units in the time domain resource grouping information is a time domain distribution of an uplink time domain resource unit and a downlink time domain resource unit.

2015. The apparatus according to claim 1610, wherein the apparatus further comprises:

a second indicating unit, configured to send an activation indication to the terminal, wherein the activation indication indicates that the terminal determines the time domain resource unit used by the terminal according to a time domain distribution of a group of assigned time domain resource units in the first time domain resource grouping information;-

~~16. The apparatus according to claim 10, wherein the apparatus further comprises:~~

a third indicating unit, configured to send a grouping selection indication to the terminal;

wherein the grouping selection indication indicates that the terminal determines the time domain resource unit used by the terminal according to at least one of the following: a time domain distribution of a group of assigned time domain resource units in the first time domain resource grouping information, and the second time domain resource grouping information.

~~17. The apparatus according to claim 9, wherein the first indicating unit (1102) is configured to:~~

~~send the resource indication information to the terminal through DCI, when the resource indication information indicates a second type of resource; wherein the second type of resource is a resource for downlink data transmission, a resource for uplink data transmission, a resource for feeding back an acknowledgement/negative acknowledgment message in an HARQ process, or a resource for transmitting a PUCCH;~~

~~send the resource indication information to the terminal through at least one of a PBCH and SI, when the resource indication information indicates a resource for contention access; and~~

~~send the resource indication information to the terminal through at least one of RRC signaling and a MAC CE, when the resource indication information indicates a resource for non-contention access.~~

~~18. The apparatus according to claim 9, wherein,~~

~~the resource indication information comprises a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time domain;~~

~~or;~~

~~the resource indication information does not comprise a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time domain.~~

~~19. The apparatus according to claim 18, wherein;~~

~~the resource indication information indicates that the terminal determines an Nth time domain resource unit after the current time domain unit in a currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the resource indication information comprises the timing offset; wherein N is the timing offset, and N is an integer; and~~

~~the resource indication information indicates that the terminal determines an Mth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the resource indication information does not comprise the timing offset; wherein M is at least one of an integer obtained according to presetting, an integer obtained according to a network configuration, and an integer obtained according to presetting and a network configuration;~~

~~wherein the currently used time domain distribution of time domain resource units is a time domain distribution of one or more groups of time domain resource units determined by the terminal from the time domain distribution of the at least one group of time domain resource units.~~

~~20. A resource indicating apparatus, wherein the apparatus comprises:~~

~~a configuration receiving unit (1201), configured to receive configuration information sent by an access network device, wherein the configuration information comprises time domain resource grouping information indicating a time domain distribution of at least one group of time domain resource units;~~

~~a first indication receiving unit (1202), configured to receive resource indication information sent by the access network device; and~~

~~a resource determining unit (1203), configured to determine a time domain resource unit used by a terminal according to the time domain resource grouping information.~~

21. The apparatus according to claim 20, wherein,

~~the configuration information comprises first time domain resource grouping information indicating a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units is associated with one assigned type of signal;~~

~~or,~~

~~the configuration information comprises first time domain resource grouping information and second time domain resource grouping information; wherein the first time domain resource grouping information indicates a time domain distribution of at least one group of assigned time domain resource units, and each group of the assigned time domain resource units corresponds to one assigned type of signal; and the second time domain resource grouping information indicates a time domain distribution of at least one group of common time domain resource units.~~

22. The apparatus according to claim 21, wherein,

~~the configuration information further comprises a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal.~~

23. The apparatus according to claim 21, wherein the apparatus further comprises:

~~a correspondence receiving unit, configured to receive a correspondence between the time domain distribution of the at least one group of assigned time domain resource units and the assigned type of signal sent by the access network device.~~

24. The apparatus according to claim 22 or 23, wherein the apparatus further comprise:

~~a first domain distribution determining unit, configured to determine a time domain distribution of one or more groups of assigned time domain resource units corresponding to an assigned type of signal, which is currently detected, as a currently used time domain distribution of time domain resource units.~~

25. The apparatus according to claim 21, wherein the apparatus further comprise:

~~a second indication receiving unit, configured to receive an activation indication sent by the access network device; and~~

~~a second domain distribution determining unit, configured to determine, according to the activation indication, a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource~~

~~grouping information as a currently used time domain distribution of time domain resource units.~~

26. The apparatus according to claim 21, wherein the apparatus further comprise:
~~a third indication receiving unit, configured to receive a grouping selection indication sent by the access network device; and~~

~~a third time domain distribution determining unit, configured to determine, according to the grouping selection indication, a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource grouping information, or the time domain distribution of the at least one group of common time domain resource units, or a combination of a time domain distribution of one or more groups of assigned time domain resource units in the first time domain resource grouping information and the time domain distribution of the at least one group of common time domain resource units, as a currently used time domain distribution of time domain resource units.~~

27. The apparatus according to any one of claims 24 to 26, wherein the resource indication information comprises a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time domain; and

~~the resource determining unit (1203) is configured to determine an Nth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal;~~

~~wherein N is the timing offset, and N is an integer.~~

28. The apparatus according to claim 27, wherein,

~~the resource determining unit (1203) is configured to determine an Nth available time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal.~~

29. The apparatus according to claim 27 or 28, wherein the resource determining unit (1203) is configured to:

~~determine an Nth uplink time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the time domain resource unit used by the terminal is an uplink time domain resource unit; and~~

~~determine an Nth downlink time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, when the time domain resource unit used by the terminal is a downlink time domain resource unit.~~

~~30. The apparatus according to any one of claims 24 to 26, wherein the resource indication information does not comprise a timing offset indicating an offset between the time domain resource unit used by the terminal and a current time domain resource unit in a time domain; and~~

~~the resource determining unit (1203) is configured to determine an Mth time domain resource unit after the current time domain unit in the currently used time domain distribution of time domain resource units as the time domain resource unit used by the terminal, wherein M is at least one of an integer obtained according to presetting, an integer obtained according to a network configuration, and an integer obtained according to presetting and a network configuration.~~