

CLAIMS

What is claimed is:

1. A method for transmitting a control channel, comprising:
generating at least one enhanced control channel element eCCE; and
transmitting the control channel through the at least one eCCE; wherein:
a process of generating each eCCE specifically comprises:

determining at least two physical resource block PRB pairs for transmitting the control channel, wherein each PRB pair of the at least two PRB pairs ~~is corresponding to~~ comprises multiple enhanced resource element groups eREGs and ~~the resource location information of~~ multiple eREGs have eREG attribute information that is not exactly the same; and

~~selecting an eREGs from the multiple eREGs corresponding to each PRB pair, wherein~~
~~the resource location information of selected eREGs are different from each other~~have
~~different eREG attribute information, and forming an eCCE with the selected eREGs.~~

2. The method according to claim 1, wherein each eREG among the multiple eREGs comprises a specified number of resource elements REs, resource elements REs comprised in each PRB pair are divided according to the specified number to obtain multiple groups, and each group is corresponding to an eREG.

- ~~3. The method according to claim 1 or 2, wherein:~~

~~the eREG attribute information comprises resource location information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource location information; or~~

~~the eREG attribute information comprises resource port number information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource port number information; or~~

~~the eREG attribute information comprises resource location information and resource port number information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource location information, or that the selected eREGs have different resource port number information, or that the selected eREGs have different resource location information and resource port number information.~~

34. The method according to claim 13, wherein the selected eREGs have different attribute information further comprises the numbers of punches of an RE; and
~~that the selected eREGs have different eREG attribute information further comprises~~
~~that the selected eREGs have different numbers of punches~~

54. The method according to ~~any one of~~ claims 1, wherein before transmitting the control channel through the at least one eCCE, to 4, the method further comprises~~comprising~~:
selecting at least two eCCEs from the generated at least one eCCEs, wherein among eREGs of the at least two eCCEs, eREGs belonging to a same PRB pair have different resource port number information; and
~~wherein the~~ transmitting the control channel through the at least one eCCE is specifically comprises: transmitting the control channel through the selected at least two eCCEs.

56. An apparatus for transmitting a control channel, comprising:
a generation unit, configured to generate at least one enhanced control channel element eCCE; and
a transmission unit, configured to transmit the control channel through the at least one eCCE generated by the generation unit; wherein:
the generation unit is specifically configured to determine at least two physical resource block PRB pairs for transmitting the control channel when each eCCE is generated, wherein each PRB pair of the at least two PRB pairs comprises is corresponding to multiple enhanced resource element groups eREGs and the resource location information of multiple eREGs have eREG attribute information that is not exactly the same; and select an eREGs from the multiple eREGs corresponding to each PRB pair, wherein the resource location information of selected eREGs have are different from each other eREG attribute information, and form an eCCE with the selected eREGs.

67. The apparatus according to claim 56, wherein each eREG among the multiple eREGs comprises a specified number of resource elements REs, resource elements REs comprised in each PRB pair are divided according to the specified number to obtain multiple groups, and each group is corresponding to an eREG.

8. The apparatus according to claim 6 or 7, wherein:

~~the eREG attribute information comprises resource location information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource location information; or~~

~~the eREG attribute information comprises resource port number information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource port number information; or~~

~~the eREG attribute information comprises resource location information and resource port number information, and that the selected eREGs have different eREG attribute information refers to that the selected eREGs have different resource location information, or that the selected eREGs have different resource port number information, or that the selected eREGs have different resource location information and resource port number information.~~

79. The apparatus according to claim 57, wherein:

~~the eREG attribute information further comprises the number of punches of an RE; and that the selected eREGs have different eREG attribute information further comprises that the selected eREGs have different numbers of punches.~~

810. The apparatus according to ~~any one of~~ claims 56 to 9, further comprising:

a selection unit, configured to select at least two eCCEs from the at least one eCCEs generated by the generation unit, wherein among eREGs of the at least two eCCEs, eREGs belonging to a same PRB pair have different resource port number information; and

wherein the transmission unit is ~~specifically~~ configured to transmit the control channel through the at least two eCCEs selected by the selection unit.