

CLAIMS

1. Apparatus for receiving a resource grant for multiple subframes in a communication system, the apparatus comprising
- 5 a transceiver for receiving signal comprising a control information including
- the resource grant for multiple subframes and a plurality of codewords for each subframe,
- a precoding indication common for the multiple subframes,
- 10 a modulation and coding scheme, MCS, indicator common for the granted multiple subframes and individual for each of the plurality of codewords, the MCS indicator taking one of a plurality of values including values indicating one of a plurality of MCSs and at least one value not indicating MCS,
- 15 a processing device configured to determine that a codeword from the plurality of codewords in the multiple subframes is disabled if the MCS indicator for at least one of the plurality of codewords has a value not indicating MCS and not disabled otherwise.
2. Apparatus according to claim 1, wherein the plurality of values includes 32 indexed values out of which three with the highest indexes do not indicate MCS and are usable
- 20 to indicate disabling of a codeword for the multiple subframes.
3. Apparatus according to claim 1 or 2, wherein
- the control information further comprises a redundancy version indication individual for each of the multiple subframes and common for all codewords in the respective
- 25 subframe, and
- the processing device is configured to determine that a codeword from the plurality of codewords in the multiple subframes is disabled if the MCS indicator for at least one of the plurality of codewords has a value not indicating MCS and the redundancy version indication has a first predefined value, and not disabled otherwise.

4. Apparatus according to claim 3, wherein in a subframe in which one codeword is enabled and one codeword is disabled, the processing device is configured to determine a redundancy version for the enabled codeword based on the particular value not indicating MCS, which is used to indicate disabling of the disabled
5 codeword together with the redundancy version indication.
5. Apparatus according to claim 3 or 4, wherein in a subframe in which two codewords are enabled and no codeword is disabled, the processing device is configured to determine the MCS for the enabled codewords based on the particular value
10 indicating MCS, which is not used to indicate disabling of the disabled codeword together with the redundancy version indication.
6. Apparatus according to any of claims 1 to 5, wherein the control information further comprises precoding indication common for the multiple subframes with only one
15 enabled codeword.
7. Apparatus according to any of claims 1 to 6, wherein the precoding indication is indicating a combination of transmitted precoding matrix indication, TPMI, and number of transmission layers:
- 20 indicating a combination of TPMI and number of transmission layers out of a plurality of predefined combinations of TPMI and number of transmission layers; or
- indicating a combination of TPMI and number of transmission layers out of a plurality of combinations of TPMI and number of transmission layers in a candidate set preconfigured by means of a semi-static signaling; or
- 25 indicating a combination of TPMI and number of transmission layers either out of a plurality of predefined combinations of TPMI and number of transmission layers which are also selectable for a single-layer configuration using a single codeword per subframe or out of a plurality of predefined combinations of TPMI and number of transmission layers which are not selectable for the single-layer configuration,
- 30 wherein the values of the precoding indication indicating respective combinations of TPMI and number of transmission layers not selectable for the single-layer system are reserved values in a precoding indication of the single-layer configuration.

8. Apparatus for receiving a resource grant for multiple subframes in a communication system, the apparatus comprising
- a transceiver for receiving signal comprising a control information including
- 5 the resource grant common for multiple subframes and a plurality of codewords for each subframe,
- a codeword indication indicating enabling or disabling of one or more codewords for each of the multiple subframes,
- 10 a processing device configured to determine for each subframe whether a codeword from the plurality of codewords in said subframes is enabled or disabled according to the codeword indication and/or which codeword is enabled or disabled.
9. Apparatus according to claim 8, wherein the codeword indication is a bitmap including an individual bit for each of the multiple subframes, each individual bit indicating
- 15 either one or two enabled codewords.
10. Apparatus according to claim 8 or 9, wherein
- the control information further comprises a modulation and coding scheme, MCS, indicator common for the granted multiple subframes and individual for each of the
- 20 plurality of codewords, the MCS indicator taking one of a plurality of values including values indicating one of a plurality of MCSs and at least one value not indicating MCS,
- the processing device is further configured to determine modulation and coding scheme for each enabled codeword according to the MCS indicator taking a value
- 25 indicating one of the plurality of MCSs.
11. Apparatus according to claim 10, wherein the processing device is further configured to determine precoding configuration, in case a single codeword is enabled, based on the MCS indicator taking a value not indicating one of the plurality of MCSs, or to
- 30 determine which codeword is disabled based on the MCS indicator taking a value not

indicating one of the plurality of MCSs or based on the redundancy version indicator for the subframe in which a single codeword is enabled.

12. Apparatus for transmitting a resource grant for multiple subframes in a communication system, the apparatus comprising
- 5 a processing device configured to set a modulation and coding scheme, MCS, indicator to a value not indicating MCS to indicate that a codeword from the plurality of codewords in the multiple subframes is to be disabled,
- a transceiver for transmitting signal comprising a control information including
- 10 the resource grant for multiple subframes and a plurality of codewords for each subframe,
- a precoding indication common for the multiple subframes,
- the MCS indicator common for the granted multiple subframes and individual for each of the plurality of codewords, the MCS indicator taking one of a plurality of
- 15 values including values indicating one of a plurality of MCSs and at least one value not indicating MCS.
13. Apparatus for transmitting a resource grant for multiple subframes in a communication system, the apparatus comprising:
- 20 a processing device configured to select for each subframe whether a codeword from the plurality of codewords in said subframes is enabled or disabled and to set a a codeword indication accordingly;
- a transceiver for transmitting a signal comprising a control information including
- 25 the resource grant common for multiple subframes and a plurality of codewords for each subframe,
- the codeword indication indicating enabling or disabling of one or more codewords for each of the multiple subframes.

14. Method for receiving a resource grant for multiple subframes in a communication system, the method comprising:
- receiving signal comprising a control information including
- the resource grant for multiple subframes and a plurality of codewords for each subframe,
- a precoding indication common for the multiple subframes,
- a modulation and coding scheme, MCS, indicator common for the granted multiple subframes and individual for each of the plurality of codewords, the MCS indicator taking one of a plurality of values including values indicating one of a plurality of MCSs and at least one value not indicating MCS,
- determining that a codeword from the plurality of codewords in the multiple subframes is disabled if the MCS indicator for at least one of the plurality of codewords has a value not indicating MCS and not disabled otherwise.
15. Method for receiving a resource grant for multiple subframes in a communication system, the method comprising:
- receiving signal comprising a control information including
- the resource grant common for multiple subframes and a plurality of codewords for each subframe,
- a codeword indication indicating enabling or disabling of one or more codewords for each of the multiple subframes,
- determining for each subframe whether a codeword from the plurality of codewords in said subframes is enabled or disabled according to the codeword indication and/or which codeword is enabled or disabled.