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(54) **Title:** COMMUNICATION METHOD, BASE STATION AND USER EQUIPMENT

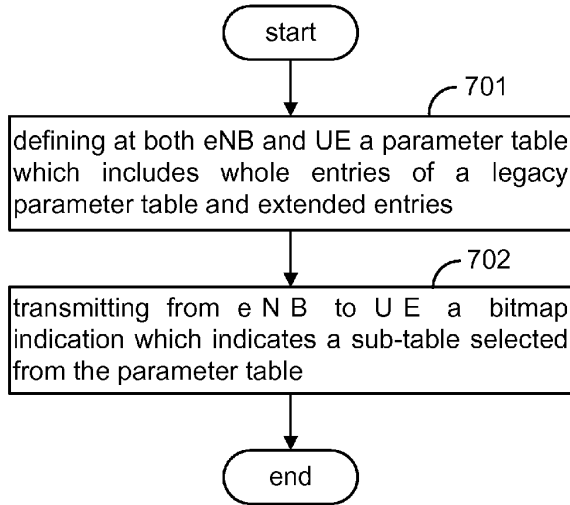


Fig.7

(57) **Abstract:** The present disclosure provides a communication method, base station and user equipment for configuring a parameter table in a wireless communication system including a base station and a user equipment, the communication method comprising: defining at both the base station and the user equipment a parameter table which includes whole entries of a legacy parameter table and extended entries; and transmitting from the base station to the user equipment a bitmap indication which indicates a sub-table selected from the parameter table, wherein the number of the entries in the sub-table is the same as in the legacy parameter table.

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**COMMUNICATION METHOD, BASE STATION AND USER EQUIPMENT**

## TECHNICAL FIELD

5

The present disclosure relates to parameter table configuration technique in the communication field.

## 10 BACKGROUND ART

In 3GPP (3rd Generation Partnership Project) Rel.8/9/10 system, Channel Quality Indicator (CQI), one type of channel state information (CSI), is an important communication parameter used for scheduling and link adaptation at eNodeB (eNB). In practice, since UE (user equipment) knows better about the downlink channel based on certain reference signal, like CRS (common reference signal) or CSI-RS (channel state information-reference signal), CQI is calculated and recommended at UE side. Then, CQI is feedback by the UE with a certain index in the CQI table, which includes some combinations of modulation order and coding rate, referring to Table 7.2.3-1 in 3GPP TS 36.213 V10.5.0, which is entirely incorporated hereto by reference.

Fig. 1 shows the CQI table in TS 36.213. It can be seen from Fig. 1 that the standard CQI table, which may also be referred to as a legacy CQI table, includes 16 entries with indices from 0-15, corresponding to modulation schemes such as QPSK, 16QAM and 64QAM. Therefore, 4 bits are necessary to reflect a certain entry when the UE feedbacks a certain wideband CQI to the eNB.

30 As to other CQI types defined according to different feedback modes or transmission modes, such as subband CQI, spatial CQI or UE selected CQI, UE do not directly feedback the entry/index in the same CQI table as shown in Fig. 1. Instead, an implicit mechanism is used to feedback their CQI offset level from the wideband CQI value. For example,

*Subband differential CQI offset level = subband CQI index - wideband CQI index.*

Fig. 2 shows the subband differential CQI table in TS 36.213. It can be seen  
5 that the standard subband differential CQI table, which may also be referred to  
as a legacy subband differential CQI table, includes 4 entries with indices from  
0 to 3. Therefore, UE needs 2 additional bits to feedback the subband  
differential CQI offset level.

10 Also, Modulation Coding Scheme (MCS) is an important communication  
parameter in 3GPP Rel.8/9/10 system. MCS refers to which combination of  
modulation order and coding rate is used in physical transmission of downlink  
and uplink. There is also a table, called MCS table, restricts which combination  
of modulation order and transport block size could be used.

15 Fig. 3 shows the MCS table in TS 36.213. It can be seen that the standard  
MCS table, which may also be referred to as a legacy MCS table, includes 32  
entries with indices from 0-31, corresponding to modulation orders such as 2, 4  
and 6. The last three entries with indices 29-31 are used for re-transmission. In  
20 3GPP, which MCS is used is informed in Downlink Control Information (DCI).  
And 5 bits are necessary for this indication.

## SUMMARY OF THE DISCLOSURE

25 With the future introduction of new technologies and new network deployment,  
such as 3D beamforming, massive MIMO and dense deployment of small cell  
etc., user equipment has more opportunities to maintain high quality wireless  
channel link with high SINR, so it is possible and beneficial for the system to  
30 support higher modulation orders than current system, like 256QAM or  
1024QAM, in order to further improve the spectral efficiency and user  
throughput.

Correspondingly, there is a need to configure the parameter table, such as the

CQI table or the MCS table described above, so that more entries corresponding to higher modulation orders and/or coding rates than those in the legacy tables can be indicated. There is also a need to configure the differential CQI table to indicate more CQI offset levels, so that the indication of the differential CQI can be more accurate.

The present disclosure is made in consideration of the above aspects.

According to one aspect of the present disclosure, there is provided a communication method of configuring a parameter table in a wireless communication system including a base station and a user equipment, comprising: defining at both the base station and the user equipment a parameter table which includes whole entries of a legacy parameter table and extended entries; and transmitting from the base station to the user equipment a bitmap indication which indicates a sub-table selected from the parameter table.

According to another aspect of the present disclosure, there is provided a communication method of configuring a parameter table in a wireless communication system including a base station and a user equipment, comprising: defining at both the base station and the user equipment multiple parameter tables which include at least a legacy parameter table and an aggressive parameter table which includes new modulation order related entries or new combinations of modulation order and coding rate; and transmitting from the base station to the user equipment an indication which indicates a parameter table selected from the multiple parameter tables, wherein the number of entries in any one of the multiple parameter tables is the same as in the legacy parameter table to keep signaling overhead unchanged.

According to a further aspect of the present disclosure, there is provided a communication method of configuring a parameter table in a wireless communication system including a base station and a user equipment, comprising: defining at both the base station and the user equipment a parameter table which includes whole entries of a legacy parameter table and extended entries; and transmitting from the base station to the user equipment an indication which indicates one entry of the parameter table, by legacy bits and at least one unused bit jointly.

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