



US 20140016549A1

(19) **United States**
 (12) **Patent Application Publication** (10) **Pub. No.: US 2014/0016549 A1**
 Novlan et al. (43) **Pub. Date: Jan. 16, 2014**

(54) **METHODS AND APPARATUS FOR CODEBOOK SUBSET RESTRICTION FOR TWO-DIMENSIONAL ADVANCED ANTENNA SYSTEMS**

Publication Classification

(51) **Int. Cl.**
H04B 7/04 (2006.01)
 (52) **U.S. Cl.**
 CPC *H04B 7/0417* (2013.01)
 USPC **370/328**

(71) Applicant: **Samsung Electronics Co., LTD**,
 Suwon-si (KR)
 (72) Inventors: **Thomas David Novlan**, Dallas, TX
 (US); **Krishna Sayana**, San Jose, CA
 (US); **Young-Han Nam**, Richardson, TX
 (US); **Jin-Kyu Han**, Allen, TX (US)

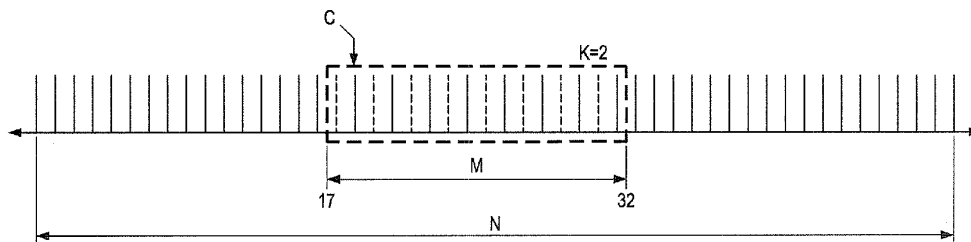
(57) **ABSTRACT**

A user equipment (UE) in a wireless network having two-dimensional antenna systems performs a method of codebook sampling. The method includes receiving from an eNodeB (eNB) an indication of a restricted subset M of vertical precoding matrices, wherein M is less than a total number of vertical precoding matrices N in a codebook, the codebook comprising a plurality of vertical precoding matrices and horizontal precoding matrices. The method also includes feeding back vertical precoding matrix indicators (V-PMI) to the eNB based on the restricted subset of vertical precoding matrices.

(21) Appl. No.: **13/939,934**
 (22) Filed: **Jul. 11, 2013**

Related U.S. Application Data

(60) Provisional application No. 61/670,936, filed on Jul. 12, 2012.



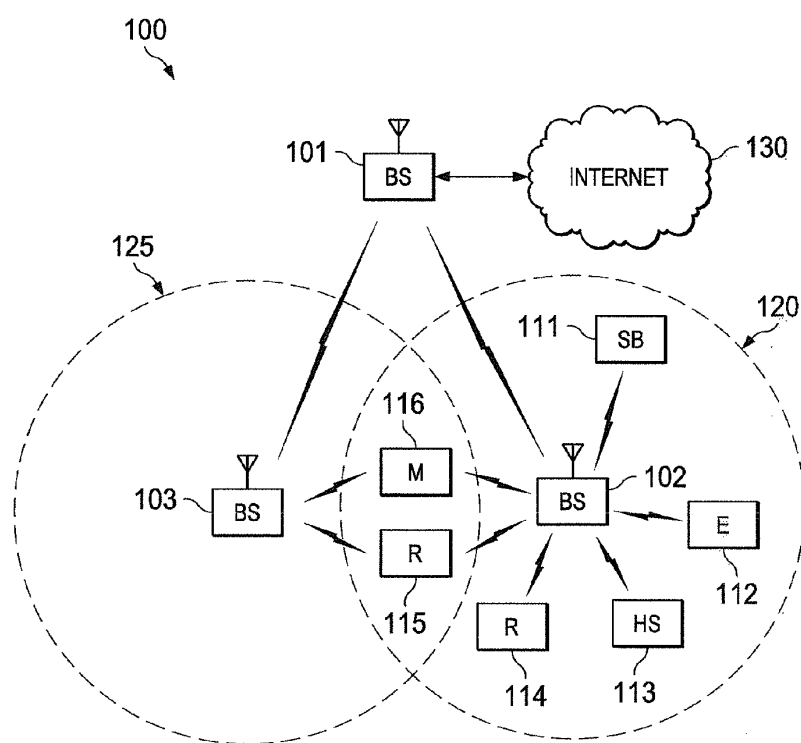


FIG. 1

FIG. 2

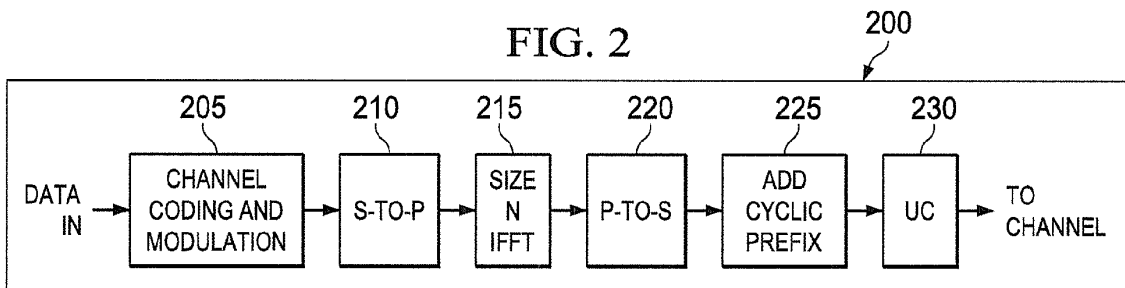
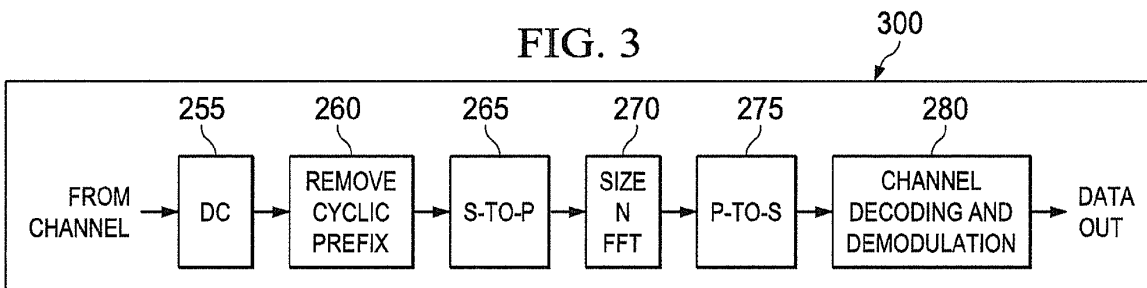


FIG. 3



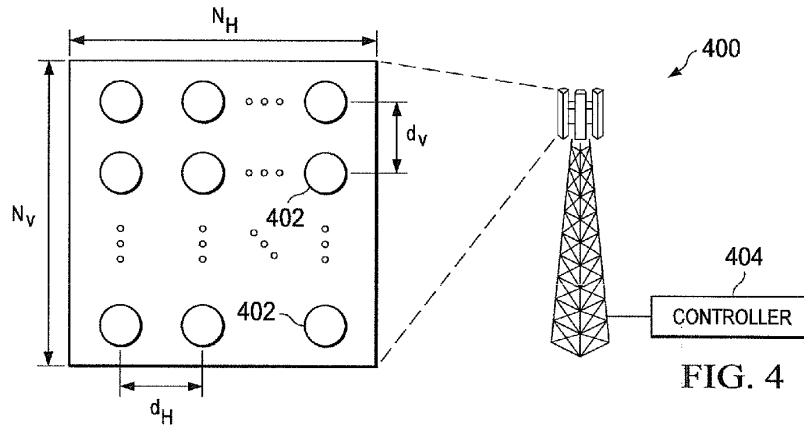


FIG. 4

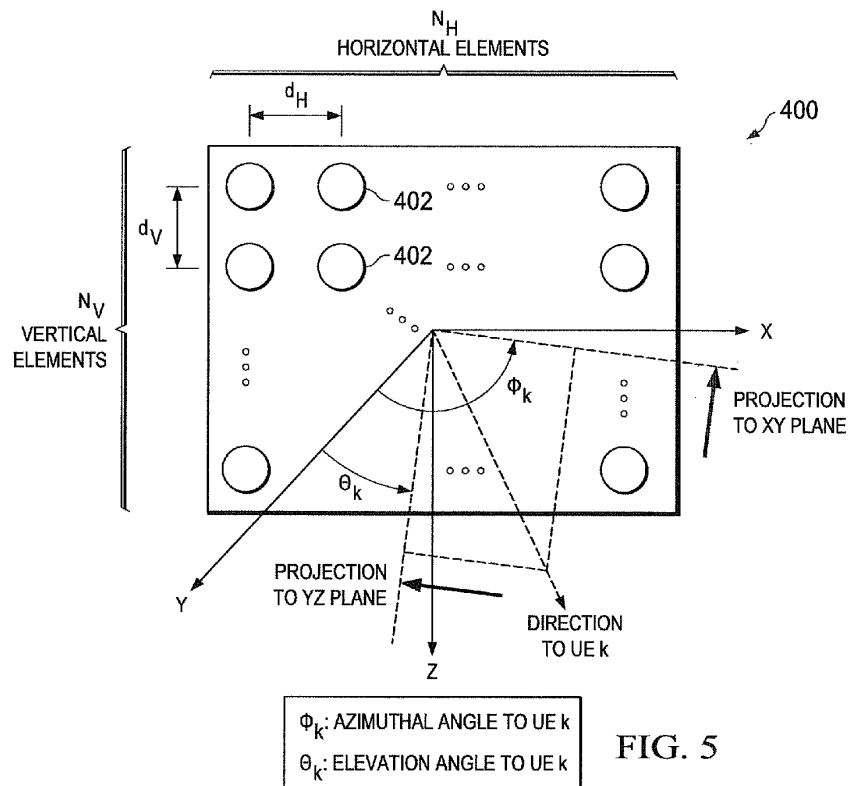


FIG. 5

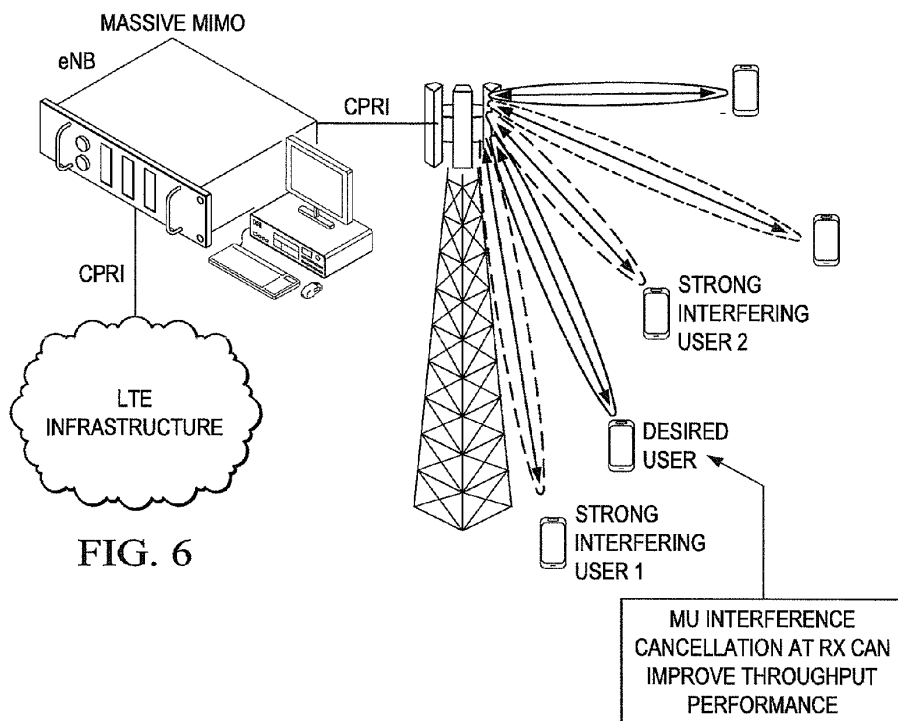


FIG. 6

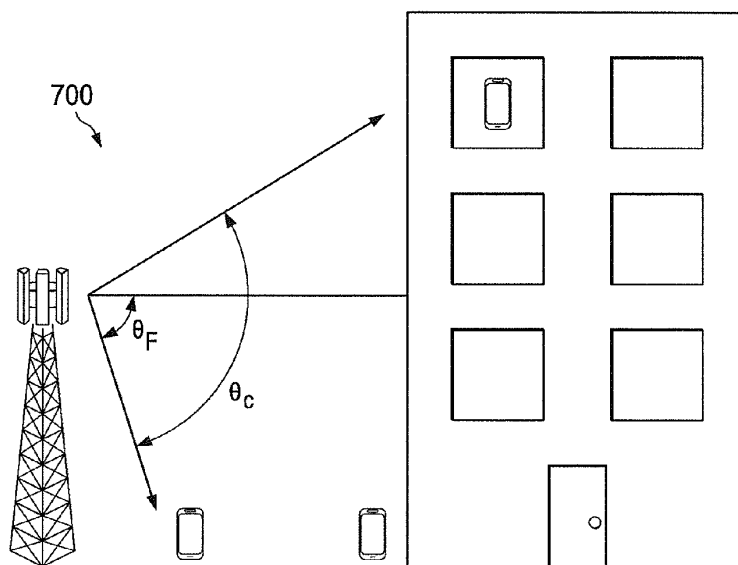


FIG. 7

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