

1) Family number: 56823454 (US2016043781 AA)

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Title: APPARATUS AND METHOD FOR TRAINING BEAM

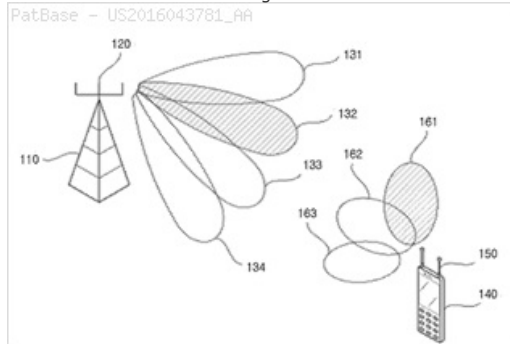
Abstract: A system for training beam including a transmitter forming a transmission beam using a transmission array and a receiver forming a receiving beam using a receiving array is disclosed. The transmitter transmits an identifier of a transmission training beam selected from the transmission beams using a secondary synchronization signal or a common reference signal, etc. The identifier of the transmission training beam is used for the beam training.

Classifications:

International (IPC 8-9): H01Q3/24 H04B7/04 H04B7/0408 H04B7/06 H04B7/08 H04J11/00 H04L27/26 H04L5/00 H04W16/28 H04W28/18 H04W72/04 H04W72/12

CPC: H01Q3/24 H04B7/0408 H04B7/0617 H04B7/0626 H04B7/063 H04B7/0634 H04B7/0639 H04B7/0684 H04B7/0695 H04B7/0851 H04B7/088 H04L27/2613 H04L5/0051 H04W72/046 H04L5/0048 H04W56/001 H04W16/28

US: 342/368 342/373 342/385



Family:

Publication number	Publication date	Application number	Application date
CN105393467 A	20160309	CN201380077891	20131210
CN105393467 B	20190402	CN201380077891	20131210
EP2988431 A1	20160224	EP20130887663	20131210
EP2988431 A4	20170503	EP20130887663	20131210
EP2988431 B1	20181114	EP20130887663	20131210
KR101412166 B1	20140701	KR20130075723	20130628
KR101474732 B1	20141222	KR20130120578	20131010
US10341004 BB	20190702	US20150922562	20151026
US2016043781 AA	20160211	US20150922562	20151026
WO14208844 A1	20141231	WO2013KR11417	20131210

Priority:

KR20130075723 20130628 KR20130120578 20131010 WO2013KR11417 20131210
US20150922562 20151026

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 63564602 (US2018069611 AA)

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Title: METHOD AND APPARATUS FOR REPORTING CHANNEL QUALITY INFORMATION FOR 3D MIMO IN WIRELESS COMMUNICATION SYSTEM

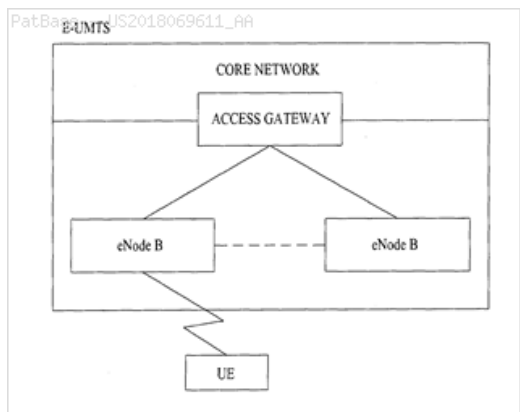
Abstract: Disclosed herein a method of, at a user equipment (UE), reporting channel quality information for three-dimensional (3D) multiple input multiple output (MIMO) transmission to a base station in a wireless communication system. The method includes receiving information for vertical cycling beamforming from the base station, calculating the channel quality information using the information for the vertical cycling beamforming, on the assumption that different vertical beamforming is circularly applied in a predetermined resource unit to receive a downlink signal, and reporting the calculated channel quality information to the base station.

Classifications:

International (IPC 8-9): H01Q21/24 H04B7/04 H04B7/0413 H04B7/0456 H04B7/06 H04L5/00 H04W16/28 H04W40/00 H04W72/04 H04W72/12 H04W88/02 H04W88/08

CPC: H04B7/0413 H04B7/0456 H04B7/0478 H04B7/0617 H04B7/0626 H04B7/0632 H04B7/0639 H04B7/0645 H04B7/0695 H04L5/0025 H04L5/0044 H04L5/0048 H04L5/0053 H04L5/0057

H04W16/28 H04W72/042 H04W72/0446 H04W72/0453 H04W72/046
H04W72/1289 H04W88/02 H04W88/08
US: 1/1 370/329



Family:

Publication number	Publication date	Application number	Application date
■ CN107431514 A	20171201	CN201680014335	20160111
■ EP3269049 A1	20180117	EP20160761881	20160111
■ EP3269049 A4	20181024	EP20160761881	20160111
■ US10686503 BB	20200616	US20160554702	20160111
■ US2018069611 AA	20180308	US20160554702	20160111
■ WO16143994 A1	20160915	WO2016KR00226	20160111

Priority:

US20150130564P 20150309 US20150260333P 20151127 WO2016KR00226 20160111
US20160554702 20160111

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识产权代理有限公司 11219; 夏凯; 谢丽娜

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR
CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID
IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN
MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG
SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW