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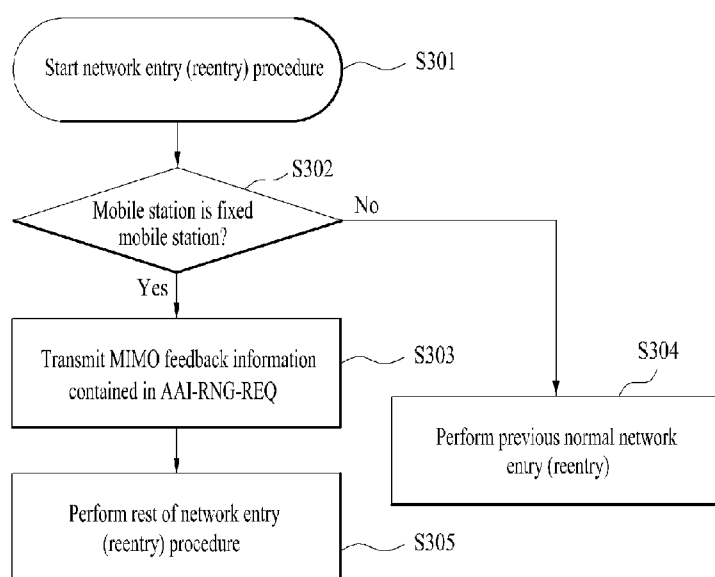
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[Continued on next page]

(54) Title: METHOD OF TRANSMITTING AND RECEIVING MIMO FEEDBACK INFORMATION IN WIRELESS COMMUNICATION SYSTEM, MOBILE STATION AND BASE STATION

[Fig. 3]



(57) Abstract: A method of transmitting an MIMO (multiple input multiple output) feedback information, which is transmitted by a mobile station in a wireless communication system, is disclosed. The present invention includes sending a ranging request message to a base station and receiving a ranging response message from the base station in response to the ranging request message, wherein the mobile station comprises a fixed M2M (machine to machine) device and wherein the ranging request message contains the MIMO feedback information.



LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
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**Previous Correction:**  
see Notice of 3 January 2013

**A. CLASSIFICATION OF SUBJECT MATTER*****H04B 7/04(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

H04B 7/04; H04L 27/00; H04B 7/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: ranging, fixed, M2M, MIMO, feedback

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                        | Relevant to claim No. |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A         | US 2010-0142642 A1 (LEE MOON IL et al.) 10 June 2010<br>See abstract; paragraphs [87]–[92]; claim 1.                                                                                      | 1–10                  |
| A         | US 2010-0316154 A1 (PARK SUNG HO et al.) 16 December 2010<br>See abstract; paragraph [49]; figure 3.                                                                                      | 1–10                  |
| A         | Q. Li, et al., "Advancement of MIMO Technology in WiMAX: From IEEE 802.16d/e/j to 802.16m," IEEE Communications Magazine, pp. 100–107, June 2009<br>See section "MU-MIMO"(pages 104–105). | 1–10                  |



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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**PCT/KR2012/001973**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)                                     | Publication<br>date                    |
|-------------------------------------------|---------------------|----------------------------------------------------------------|----------------------------------------|
| US 2010-0142642 A1                        | 10.06.2010          | EP 2122894 A1<br>KR 10-2008-0095734 A<br>WO 2008-133448 A1     | 25.11.2009<br>29.10.2008<br>06.11.2008 |
| US 2010-0316154 A1                        | 16.12.2010          | KR 10-2008-0074004 A<br>WO 2008-097042 A2<br>WO 2008-097042 A3 | 12.08.2008<br>14.08.2008<br>15.10.2009 |