Title: METHOD AND APPARATUS FOR UPLINK TRANSMISSIONS AND CQI REPORTS WITH CARRIER AGGREGATION

Abstract: A mobile station capable of communicating via an uplink transmission to at least one base station in a Multiport Multiple Output wireless network is configured to transmit multiple channel quality index (CQI) reports corresponding to multiple downlink component carriers. The mobile station includes at least one transmit antenna and a transmitter. The transmitter can communicate with a base station over the multiple downlink component carriers and at least one uplink component carrier. The transmitter can transmit the CQI report over the at least one uplink component carrier using at least one of a number of CQI reporting modes.
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report: 2 December 2010
INTERNATIONAL SEARCH REPORT

PCT/KR2010/001400

A. CLASSIFICATION OF SUBJECT MATTER

H04B 7/26(2006.01)i, 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 7/26; H04B 7/02; H04L 12/24; H04L 12/28; G06F 13/00; H04L 27/26

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) & Keywords: plural, downlink, mobile station

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>A</td>
<td>WO 2008-155549 A1 (TELEFONAKTIEBOLAGET LM ERICSSON) 24 December 2008 See the Abstract; Figs. 1-9; Claims 1-32.</td>
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<td>US 2005-0086403 A1 (CHUNG-WEN TANG) 21 April 2005 See the Abstract; Paragraphs [0007]-[0010]; Figs. 1-3; Claims 1-11.</td>
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<td>KR 10-2008-0041545 A (SAMSUNG THALES CO., LTD.) 13 May 2008 See the Abstract; Figs. 1-15: Claims 1-8.</td>
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<td>KR 10-2008-0063902 A (SAMSUNG NETWORKS INC.) 28 July 2008 See the Abstract; Figs. 1-8; Claims 1-24.</td>
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See patent family annex.

Date of the actual completion of the international search

11 OCTOBER 2010 (11.10.2010)

Date of mailing of the international search report

11 OCTOBER 2010 (11.10.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seomsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea
Facsimile No. 82-42-472-7140

Authorized officer
Park, Sung Woong
Telephone No. 82-42-481-8596

Form PCT/ISA/210 (second sheet) (July 2009)
**INTERNATIONAL SEARCH REPORT**

**Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☑ Claims Nos.: 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 19, 20, 23, 24
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

   Claims 3-7, 10-16, 19, 20, 23 and 24 contain both a method and an apparatus.

3. □ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

☑ The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)
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