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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

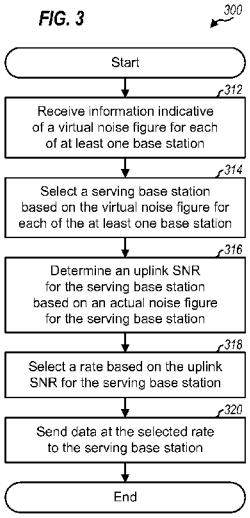
Published:

— *with international search report (Art. 21(3))*

[Continued on next page]

(54) **Title**: METHOD AND APPARATUS FOR USING VIRTUAL NOISE FIGURE IN A WIRELESS COMMUNICATION NETWORK

FIG. 3



(57) **Abstract**: Techniques for using virtual noise figure for various functions in a wireless communication network are described. A virtual noise figure is an indication of a virtual noise level at a receiver, which may be higher than an actual noise level at the receiver. In an aspect, virtual noise figure may be used for serving base station selection. A terminal may receive information indicative of a virtual noise figure for each of at least one base station. The terminal may select a serving base station based on the virtual noise figure for each base station. The terminal may send data to the serving base station at a rate selected based on an actual noise figure for the serving base station. In other aspects, virtual noise figure may be used for interference management and/or power control.

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— *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))*

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/044205

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04W36/08 H04W52/24

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)
H04W

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 156 623 A (LUCENT TECHNOLOGIES INC [US]) 21 November 2001 (2001-11-21) abstract paragraph [0006] paragraph [0019] - paragraph [0024] figures 4,5	1-37
A	US 2006/187873 A1 (FRIDAY ROBERT J [US] ET AL) 24 August 2006 (2006-08-24) abstract paragraph [0033] paragraph [0056] - paragraph [0061]	1-37

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[X] Further documents are listed in the continuation of Box C.

[X] 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

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

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

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"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.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 February 2010	10/02/2010

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004/137908 A1 (SINIVAARA HASSE [FI] ET AL SINIVAARA HASSE [FI] ET AL) 15 July 2004 (2004-07-15) abstract paragraph [0009] - paragraph [0024] paragraph [0084] - paragraph [0087]	1-37
A	WO 00/74275 A (SAMSUNG ELECTRONICS CO LTD [KR]) 7 December 2000 (2000-12-07) abstract page 5, line 35 - page 6, line 30 page 15, line 1 - page 17, line 9 page 19, line 11 - page 22, line 10	1-37
X	US 2007/197251 A1 (DAS SUMAN [US] ET AL) 23 August 2007 (2007-08-23) abstract paragraph [0014] - paragraph [0015] paragraph [0023] - paragraph [0025] claims 1,2 figures 2,3,4,5	38-49
A	WO 2008/055132 A2 (QUALCOMM INC [US]; LUO XILIANG [US]; MALLADI DURGA PRASAD [US]) 8 May 2008 (2008-05-08) abstract paragraph [0013] - paragraph [0016] paragraph [0042] - paragraph [0048]	38-49
A	WO 2007/078099 A1 (POSDATA CO LTD [KR]; KWAK KI YOUNG [KR]; LEE KANG MIN [KR]; OH JI MYUN) 12 July 2007 (2007-07-12) abstract paragraph [0010] - paragraph [0024]	38-49

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/044205

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.:
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:

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:

see additional sheet

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 fees, this Authority did not invite payment of additional fees.

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-37

A method for wireless communication comprising: receiving information regarding a (virtual) noise figure of at least one base station (claims 1, 12, 16, 20, 21, 27) or regarding a load indicator calculated also based on a (virtual) noise figure of at least one base station (claims 30, 34) and selecting a serving base station based on said information.

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2. claims: 38-49

A method for wireless communication comprising: determining a received signal quality for a terminal at a base station, generating a power control command based on the received signal quality and a (virtual) noise figure for the base station and sending the power control command to the terminal.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2009/044205

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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