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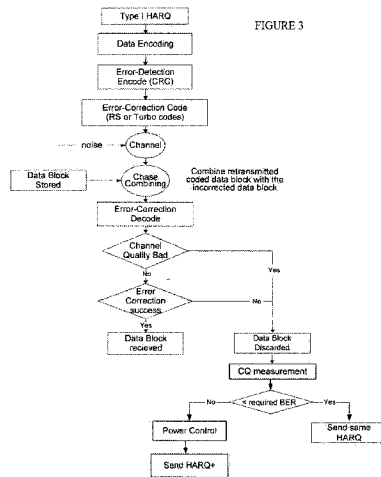
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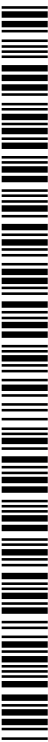
— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: DYNAMIC HARQ WITH ADAPTIVE POWER CONTROL FOR WIRELESS TRANSMISSION



(57) Abstract: In a specific embodiment, our method of communicating a message between a transmitting station and a receiving station may be outlined as employing a hybrid automated retransmission request (HARQ) protocol in a multihop relay network. Our method includes the steps of, upon detecting transmission errors, obtaining a signal-to-interference and noise ratio (SINR) measurement at the physical layer (PHY) of the data transport framework from a forwarding Relay Station (RS2) by a Mobile Station wherein the estimates of the mean or standard deviation of the SINR measurement may be derived and updated. The derived values to be compared against a Bit Error Rate (BER) value as a channel quality threshold parameter, wherein channel quality is deemed good if the error function value is at least a BER threshold and normal HARQ encoding follows. Channel quality is deemed bad if the error function value is less than the BER threshold. Channel quality information is reported via at least one of a Channel Quality Information Channel (CQICH) or channel measure report response (REP-RSP) messaging. Transmission power control information is then encoded into a hybrid automated retransmission request (HARQ+) then transmitted.



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## INTERNATIONAL SEARCH REPORT

International application No.  
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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)

IPC H04L

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 since 1975  
Japanese Utility models and applications for Utility models since 1975

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

eKOMPASS(KIPO internal) : "HARQ, adaptive, power control, SINR"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 07206598 B2 (ATTAR et al. ) 17 Apr. 2007 Abstract, Figs 4-5	1-2,11,19-21 3-10,12-18
Y A	US 7257423 B2 (IOCHI) 14 Aug. 2007 Abstract, Figs. 9,14-19, claim 1	1-2,11,19-21 3-10,12-18
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A	US 2002-0049068 A1 (KOO et al.) 25 Apr. 2002 Abstract, Fig. 1	1-21

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"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

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/MY2009/000029**

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