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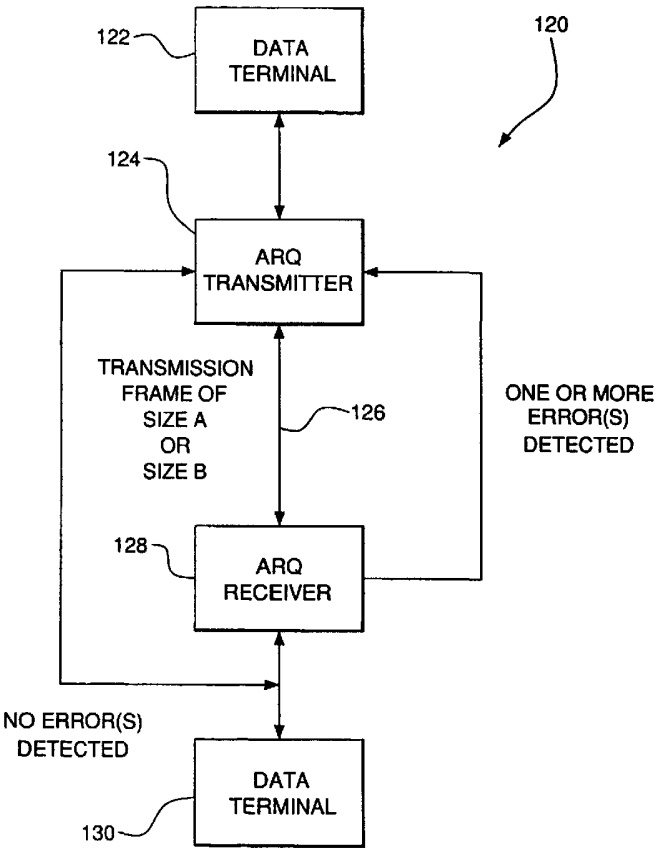
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[Continued on next page]

(54) Title: HYBRID ARQ FOR A WIRELESS AD-HOC NETWORK AND A METHOD FOR USING THE SAME



(57) Abstract: A system and method for data transmission incorporating a hybrid automatic repeat request (ARQ) (124) function at each node in an ad-hoc network. Each node is configured to calculate an optimum segment size for transmission and thereafter executes the ARQ function to transmit and receive (124, 128) data segments with forward error correction and error detection coding. The coding allows the node to detect and locate errors within received segments and to provide an acknowledgement only after all segments are correctly received. A negative acknowledgement from the receiving node states the location of failed segments, and only failed segments are then retransmitted. The failed segments can be retransmitted in their original location and in other segment locations which contained segments that did not fail, thus reducing maximum time to successfully deliver the segments.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/17249

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) :H04L 12/28, 12/56
US CL :Please See Extra Sheet.
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)

U.S. : 370/389, 394, 474, 465; 714/ 748, 749, 758, 751

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,E	US 6,615,382 B1 (KANG ET AL) 02 September 2003, see figs. 2-4.	1-40
A	US 2001/0055290 A1 (SEIDEL ET AL) 27 December 2001, see entire reference.	1-40
A	US 2002/0015416 A1 (LEE ET AL) 07 February 2002, see figs. 3A,3B.	1-40
A,P	US 2002/0196812 A1 (YAMAGUCHI ET AL) 26 December 2002, see entire reference.	1-40
A,E	US 2003/0167433 A1 (WENGERTER ET AL) 04 September 2003, see fig.3.	1-40
A,E	US 6,421,803 B1 (PERSSON ET AL) 16 July 2002, see entire reference.	1-40

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

*	Special categories of cited documents:	"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
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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		

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