

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 January 2001 (25.01.2001)

PCT

(10) International Publication Number
WO 01/006694 A3

(51) International Patent Classification⁷: H04L 1/08, 1/18

(21) International Application Number: PCT/US00/19414

(22) International Filing Date: 14 July 2000 (14.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/354,494 16 July 1999 (16.07.1999) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,

DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

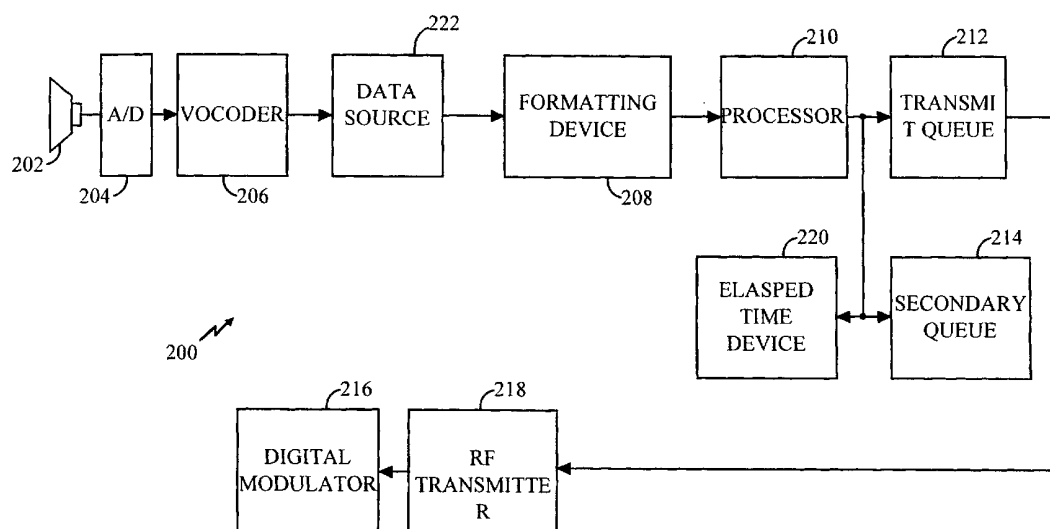
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
11 July 2002

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR EFFICIENT DATA TRANSMISSION IN A VOICE-OVER-DATA COMMUNI-
CATION SYSTEM



(57) **Abstract:** A method and apparatus for increasing the probability of successful data frame transmission from a transmitter to a receiver. When a data frame is generated by a processor (210), it is stored in a transmit queue (212) and a copy of the data frame is stored in a secondary queue (214). An elapsed time device (220) tracks the elapsed time that the data frame copy has been stored in the secondary queue (214). When no data frames are generated by the processor (210), data frame copies from the secondary queue (214) are placed into the transmit queue (212), thereby increasing the redundancy of transmitted data frames and thus the probability of successful transmission to the receiver.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/19414

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L1/08 H04L1/18

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 7 H04L

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, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JIN-FU CHANG ET AL: "END-TO-END DELAY OF AN ADAPTIVE SELECTIVE REPEAT ARQ PROTOCOL" IEEE TRANSACTIONS ON COMMUNICATIONS,US,IEEE INC. NEW YORK, vol. 42, no. 11, 1 November 1994 (1994-11-01), pages 2926-2928, XP000475152 ISSN: 0090-6778 * 1. Introduction. * figure 1 --- -/--	1,3

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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.
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Date of the actual completion of the international search

8 November 2001

Date of mailing of the international search report

15. 11. 01

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/19414

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	YONG BAI, GANG WU, ANDY T. OGIELSKI: "TCP/RLP Coordination and interprotocol signaling for wireless Internet" 49TH VEHICULAR TECHNOLOGY CONFERENCE, 16 - 20 May 1999, pages 1945-1951, XP002150417 Houston, USA	1,3
A	* II. RLP and TCP Error Recovery. *	2,4-6
A	--- WO 99 14885 A (NOKIA MOBILE PHONES LTD ;ALANARA SEPPÖ (FI); BERG HEIKKI (FI); KAA) 25 March 1999 (1999-03-25) abstract page 15, line 29 -page 16, line 9 ---	1,3
X	--- US 5 222 061 A (DOSHI BHARAT T ET AL) 22 June 1993 (1993-06-22) column 4, line 38 - line 58 -----	7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/19414

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 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.
- ☒ 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: 1-6

Method and apparatus to transmit additional redundancy over wireless channels during idle periods.

2. Claim : 7

Method for packet retransmission using a new format for negative acknowledgement packets.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/19414

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9914885	A	25-03-1999	AU 9541098 A BR 9812246 A CN 1271485 T WO 9914885 A2	05-04-1999 18-07-2000 25-10-2000 25-03-1999
US 5222061	A	22-06-1993	NONE	