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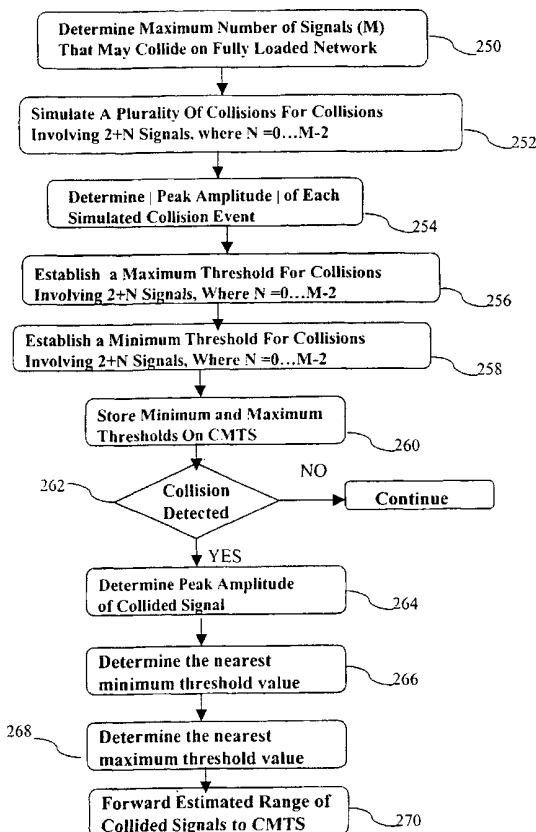
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[Continued on next page]

(54) Title: A METHOD AND APPARATUS FOR THE DETECTION AND CLASSIFICATION OF COLLISIONS ON A SHARED ACCESS RF NETWORK



(57) Abstract: The present invention is directed toward a method and apparatus for detecting collisions on a shared access network. In accordance with the present invention, two or more RF modulated signals having a plurality of different phase states are transmitted to a central controller, wherein two or more of the transmitted signals collide at the central controller. The collision detection system then determines a characteristic of the collision signal, such as the absolute value of the peak amplitude of the collision signal. The collision detection system then compares the characteristic with a plurality of thresholds and determines the number of RF modulated signals that collided as a function of the comparison. The method for detecting collisions may further include monitoring a plurality of collision events to determine a characteristic, such as the absolute value of the peak amplitude of the collision signal, of each of the collision events. The collision detection system then determines the thresholds in accordance with the characteristics of the monitored collision events. The monitored collision events may be simulated or the result of actual laboratory experimentation.



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INTERNATIONAL SEARCH REPORT

International Application No
PC1, US 00/30277

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/28 H04L12/403

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 H04Q

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)
WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 877 511 A (ROLM SYSTEMS) 11 November 1998 (1998-11-11) abstract column 1, line 5 -column 4, line 18 column 4, line 38 -column 6, line 2	27-29, 32-34
Y		1-3,6, 16,17, 21-23, 35-40
A		4,5,7, 18-20, 24-26, 41,42
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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	"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
"E" earlier document but published on or after the international filing date	"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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 15 January 2002	Date of mailing of the international search report 04 04 2002
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Vaskimo, K
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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.
Y	US 5 272 700 A (HANSEN DAVID E ET AL) 21 December 1993 (1993-12-21) column 1, line 15 -column 2, line 55 column 3, line 23 - line 51	1-3,6, 16,17, 21-23, 35-40
A	---	4,5,7, 18-20, 24-29, 32,41,42
A	US 5 012 467 A (CRANE RONALD C) 30 April 1991 (1991-04-30) abstract column 1, line 7 -column 2, line 28 column 3, line 54 -column 4, line 2 column 5, line 3 - line 35 claims 1-3,5	1,6,21, 27,32,35
A	---	1,6,21, 27,32,35
A	US 4 481 626 A (BOGGS DAVID R ET AL) 6 November 1984 (1984-11-06) abstract column 1, line 5 -column 2, line 64 column 3, line 7 -column 4, line 19 claim 1 -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/30277

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.:

1-29, 32-42

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: 1-29,32-42

A method and system for detecting collisions, where two or more signals are transmitted, where said two or more signals collide at a central controller, where the collision signal is correlated with a plurality of stored parameters, and where the number of transmitted signals that collided is determined as a function of said correlation.

2. Claims: 30,31

A method and system for detecting collisions, where two or more signals are transmitted, where said two or more signals collide, where the collision signal is correlated with a plurality of stored parameters, where the number of transmitted signals that collided is determined as a function of said correlation, where a plurality of collisions are simulated, where thresholds are established, and where said thresholds are stored.

Patent Family Annex

Information on patent family members

International Application No

Pct/US 00/30277

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0877511	A	11-11-1998	US 6205153 B1 EP 0877511 A2	20-03-2001 11-11-1998
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