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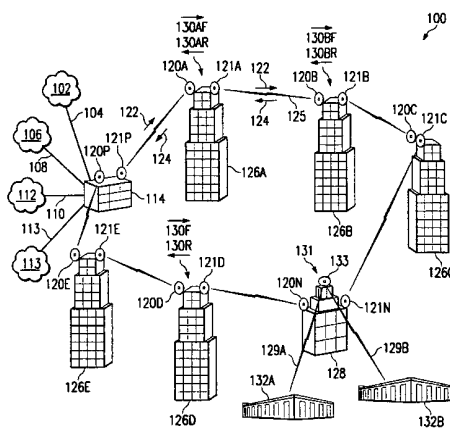
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09/245,701 6 February 1999 (06.02.1999) US
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28 December 2000
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COMMERCIAL NETWORK BASED ON POINT TO POINT RADIOS



(57) Abstract: The present invention is a wireless network designed to deliver information communication services, such as telephony and data services, from a service provider, such as an ISP or LEC to metropolitan commercial customer locations. The network of a preferred embodiment of the present invention incorporates all system components necessary to connect customers, application equipment (e.g., phones, PBX's, computers) to the service provider's equipment, (e.g., C.O. switch, Tandem switch, point of presence (POP) gateway, ISP server, etc.). The preferred embodiment of the present invention integrates all the various functional tasks at the component level, to build a comprehensive, cohesive network solution. The network architecture of the present invention includes a distributed set of non-hierarchical nodes, connected together via wireless links. Nodes of the network can act both as termination points (i.e., connecting to the customer's or service provider's equipment) and/or as tandems, (i.e., routing traffic onto other nodes). Links between nodes can be point-to-point or point-to-multipoint.



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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/28 H04L12/56 H04L12/43

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	<p>COLLIN A ET AL: "STN 155-H RADIO-RELAY SYSTEM FOR THE SYNCHRONOUS DIGITAL HIERARCHY" PHILIPS TELECOMMUNICATION REVIEW, NL, PHILIPS TELECOMMUNICATIE INDUSTRIE N.V. HILVERSUM, vol. 51, no. 2, 1 August 1993 (1993-08-01), pages 18-26, XP000426361 page 19, paragraph 3.1 -page 20, paragraph 3.2.1 page 21, paragraph 4 -page 22, paragraph 5 figures 1-3</p>	<p>1, 3, 5, 6, 11-15, 17, 21, 22, 28, 35-37, 43</p>
Y	<p style="text-align: center;">-/--</p>	<p>2, 4, 7, 8, 10, 18-20, 23, 24, 38, 41, 42, 44</p>

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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

25 July 2000

Date of mailing of the international search report

10. 11. 2000

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INTERNATIONAL SEARCH REPORT

Int: lional Application No

PCT/US 00/02818

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	---	25-27, 39,40
X	<p>DEL PISTOIA A ET AL: "TECHNICAL AND ECONOMIC ASSESSMENT ON RADIO RELAY SYSTEMS IN THE LOCAL AND DISTRIBUTION ITALIAN NETWORKS" EUROPEAN CONFERENCE ON RADIO RELAY SYSTEMS, GB, LONDON, IEE, vol. CONF. 4, 11 October 1993 (1993-10-11), pages 84-89, XP000479318 ISBN: 0-85296-594-X abstract page 3, paragraph 1.3 -page 5, paragraph 3.2 figures 4A,4B,5,6,7,8,9 table 2</p>	1,3,5,6, 11-15, 17,21, 22,28, 35-37,43
Y		2,4,7,8, 10, 18-20, 23,24, 38,41, 42,44
A		25-27, 39,40
X	<p>US 5 640 384 A (DU YONGGANG) 17 June 1997 (1997-06-17)</p> <p>column 1, line 5 -column 2, line 37 column 3, line 3 - line 38 column 5, line 21 - line 59</p>	1-3,5,6, 10-15, 17,19,20
Y		4,7,8, 18, 21-24, 28, 35-38, 41-43
A	---	25-27, 39,40,44
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INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/US 00/02818

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 5 559 795 A (AHL PETER) 24 September 1996 (1996-09-24)	2,4,7, 10, 18-20, 23,24, 38,44
A	abstract column 1, line 8 -column 5, line 64 column 7, line 14 -column 8, line 41 column 9, line 35 -column 10, line 65	1,3,5,6, 8,11-13, 17,21, 22, 25-28, 39-43
Y	US 5 371 734 A (FISCHER MICHAEL A) 6 December 1994 (1994-12-06)	2,7,10, 19,20, 23,24
A	abstract column 1, line 16 -column 5, line 66 column 7, line 67 -column 8, line 48	1,3-5, 13,21, 22,25-27
Y	US 5 515 367 A (LU LU ET AL) 7 May 1996 (1996-05-07)	4,8,18, 44
A	abstract column 1, line 15 -column 5, line 44 column 6, line 24 -column 7, line 48	1,13,21, 39,40,43
Y	EP 0 488 824 A (MOTOROLA INC) 3 June 1992 (1992-06-03)	7
A	abstract column 1, line 3 - line 40 column 2, line 14 - line 36 column 3, line 34 - line 54	1,13,19, 21
Y	ERIC C. ZIMITS: "What's Next for Wireless" INTERNET, 'Online! December 1998 (1998-12), pages 1-4, XP002143352	21,22, 28, 35-37, 41-43
A	Retrieved from the Internet: <URL:http://connected.hamquist.com/issuel1 /-wireless.html> 'retrieved on 2000-07-21! page 2	1,6,13, 17,19, 21,36,37
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/02818

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>STEPHANIE LAPOLLA: "Wireless net offers low cost, reliability" PC WEEK, 'Online! 9 June 1997 (1997-06-09), pages 1-2, XP002143353 Retrieved from the Internet: <URL:http://www8.zdnet.com/eweek/news/0609/09tns.html> 'retrieved on 2000-07-21! the whole document</p> <p style="text-align: center;">-----</p>	1,6,13, 17,19, 21,36, 37,41,42

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/02818

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.:

1-8, 10-15, 17-28, 35-44

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: 1-8,10-15,17-28,35-44,
as far as relating to the first invention

A wireless communication system comprising a plurality of wireless links, a plurality of nodes connected to the said plurality of links, and a plurality of interfaces operating at said plurality of nodes, where one of said nodes is a hub.

2. Claims: 1,9,13,16,
as far as relating to the second invention

A wireless communication system comprising a plurality of wireless links, a plurality of nodes connected to the said plurality of links, and a plurality of interfaces operating at said plurality of nodes, where one of said nodes provides a connection to an external network.

3. Claims: 21,22,29-34,
as far as relating to the third invention

A wireless communication system comprising a plurality of wireless links, a plurality of nodes connected to the said plurality of links, and a plurality of interfaces operating at said plurality of nodes, where said interfaces comprise extra ports dedicated to special purposes.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Jonal Application No

PCT/US 00/02818

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