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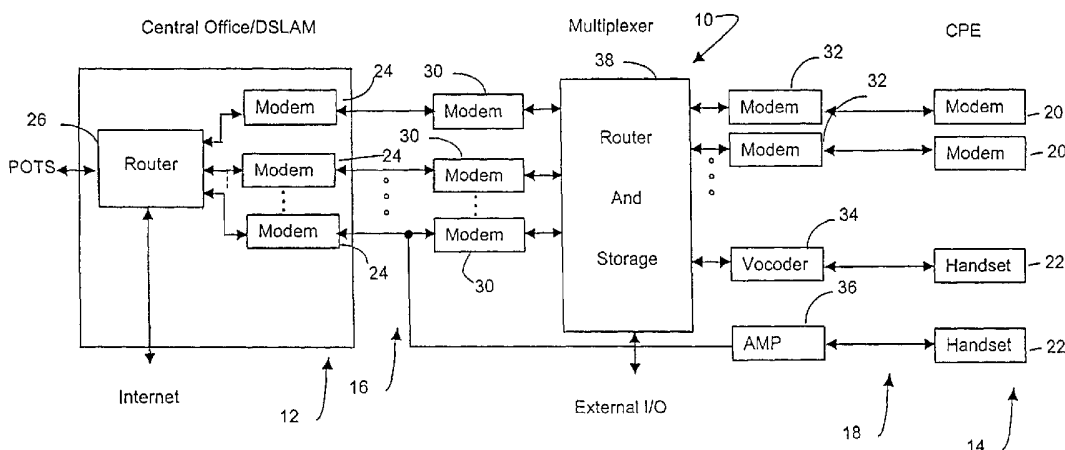
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(54) Title: SYSTEM FOR ENHANCING DATA TRANSFER



(57) Abstract: High-speed data transfer rates are provided between a central office (12) and customer premise equipment (20) with a multiplexer (10) that is interposed between the central office (12) and the customer premise equipment (20), and that functions as a remote access node. The multiplexer (10) communicates at high data rates via downstream data links (18) such as twisted-pair conductors between the multiplexer (10) and the customer premise equipment (20). By positioning the multiplexer (10) physically close to the customer premise equipment (20), DSL data rates can be achieved. In one application, the multiplexer (10) assigns a variable number of the upstream data links (16) between the central office (12) and the multiplexer (10) on a dynamic, adaptive, and automatic basis to individual ones of the downstream data links (18). In this way, unused data link capacity of the upstream data (16) links is used to provide high data transmission rates when required between the multiplexer (10) and the central office (12). In another application, the multiplexer (10) includes a dynamic switching matrix that dynamically connects one or more downstream modems (32) with selected customer premise equipment (20). In this way, modems (32) in the multiplexer (10) are time-shared among the various subscribers and connection costs are reduced.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/27556

A. CLASSIFICATION OF SUBJECT MATTER												
IPC(7) : H04J 3/04, 3/02												
US CL : 370/537												
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. : 370/352, 468, 535, 536, 537,												
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.										
X,P	U.S. 6,373,852 B1 (FOLADARE et al) 16 April 2002 (16.04.2002), columns 2,4-7	1-15, 23-26, 29, 30, 34, 35										
X	U.S. 6,198,749 B1 (HUI et al) 06 March 2001 (06.03.2001), columns 3, 4. figures 7, 8.	1-15, 23-29, 30, 34, 35										
X	U.S. Statutory Invention Registration H1175 (GIORGIO) 06 April 1993 (06.04.1993), column 4-6.	1-8										
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.												
* Special categories of cited documents: <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"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 application or patent 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	
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