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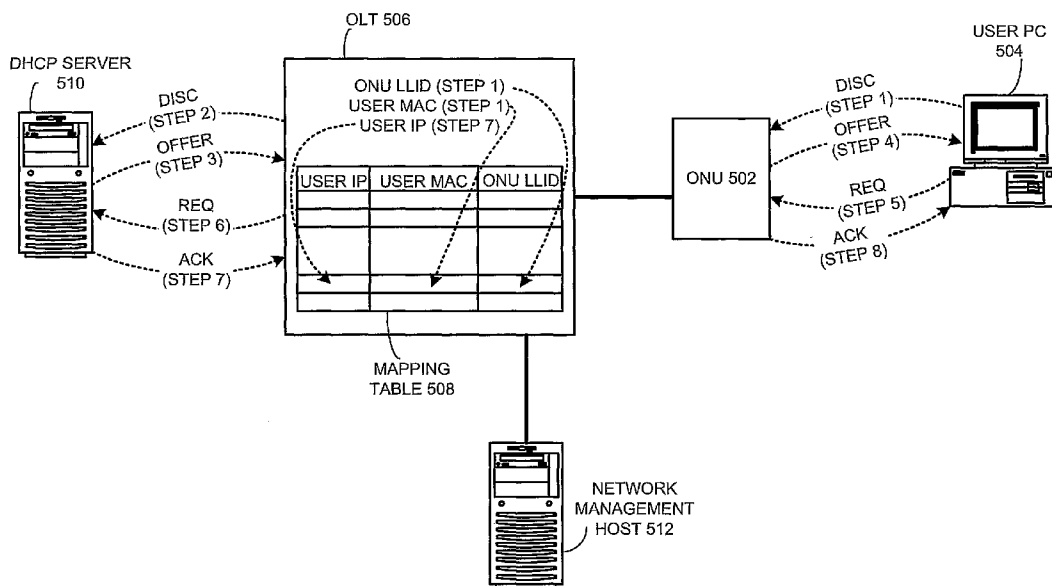
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(54) Title: METHOD AND APPARATUS FOR L3-AWARE SWITCHING IN AN ETHERNET PASSIVE OPTICAL NETWORK



(57) Abstract: One embodiment of the present invention provides a system that performs layer 3 (L3) aware switching in an Ethernet passive optical network (EPON) which includes a central node and at least one remote node. During operation, the system maintains a set of mapping information which indicates a correspondence relationship between a logical link identifier of a remote node, a medium access control (MAC) address for a subscriber coupled to the remote node, and an IP address for the subscriber. Upon receiving a packet which contains an IP address, the system selectively attaches a proper logical link identifier to the packet based on the mapping information and the IP address contained in the packet, thereby allowing only one proper remote node to receive the packet.

WO 2005/104738 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/14366

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **H04L 12/28,12/56**

USPC: 370/389,390,392,395.52,395.53,395.54,409

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. : 370/389,390,392,395.52,395.53,395.54,409

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

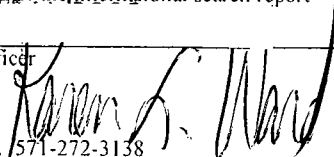
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.      |
|------------|--|----------------------------|
| X          | US 6,967,949 B2 (DAVIS et al.) 22 November 2005 (22.11.2005), col. 1, lines 25-28; col. 3, lines 29-30, 38-52, 56-58; col. 4, lines 25-35, 57-59; col. 14, lines 15-20 | 1, 2, 5, 10-12, 15, and 20 |
| A          | US 2005/0069317 A1 (LEE et al.) 31 March 2005 (31.03.2005), entire document.   | 1-20                       |
| A          | US 2004/0264400 A1 (LEE et al.) 30 December 2004 (30.12.2004), entire document.  | 1-20                       |
| A          | US 2004/0114592 A1 (KANG et al.) 17 June 2004 (17.06.2004), entire document.   | 1-20                       |
| A          | US 2003/0235205 A1 (SONG et al.) 25 December 2003 (25.12.2003), entire document.   | 1-20                       |
| A          | US 2003/0190168 A1 (SONG et al.) 09 October 2003 (09.10.2003), entire document.  | 1-20                       |
| A          | US 7,286,538 B2 (SONG et al.) 23 October 2007 (23.10.2007), entire document.   | 1-20                       |

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

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