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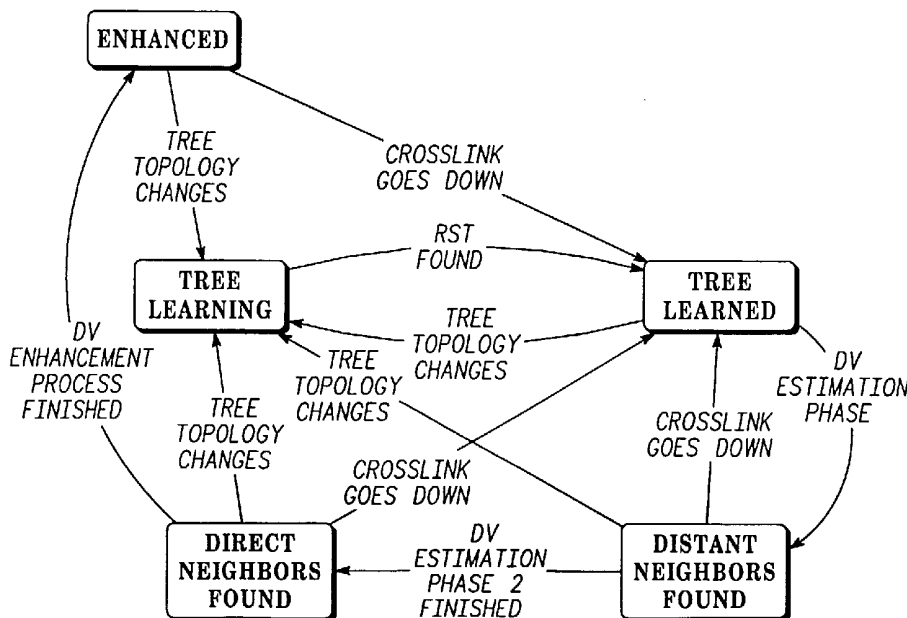
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(54) Title: SPANNING TREE ALTERNATE ROUTING BRIDGE PROTOCOL



(57) Abstract: Bridges (10, 12, 14) are used to interconnect local area networks transparently. In the IEEE 802.1D standard for bridges, a spanning tree is built among the bridges for loop-free frame forwarding (FIG. 10). Although this approach is simple, it does not support all-pair shortest paths. A novel bridge protocol is employed that attempts to find and forward frames over alternate paths that are shorter than their corresponding tree paths on the standard spanning tree, and makes use of the standard spanning tree for default forwarding. The proposed protocol, referred to as the Spanning Tree Alternate Routing (START) Bridge Protocol, is backward compatible with the IEEE 802.1D standard and has a complexity that is comparable to that of the standard and other existing protocols.

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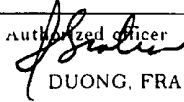


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| A. CLASSIFICATION OF SUBJECT MATTER IPC(7) :H04L 12/28, 12/46 US CL :Please See Extra Sheet. According to International Patent Classification (IPC) or to both national classification and IPC | | |
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 370/217, 221, 224, 225, 226, 227, 228, 384 390, 401, 408; 379/221.01; 709/238, 239, 242 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) IEEE, APS | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 5,150,360 A (PERLMAN ET AL) 22 SEPTEMBER 22, 1992, col. 5, line 62 to col. 11, line 57. | 1-15 and 17-24 and 26-28 |
| A | US 4,811,337 A (HART) 07 MARCH 1989, entire patent. | 1 and 17 |
| A | OGIER ET AL EFFICIENT ALGORITHMS FOR OPTIMAL ALTERNATE ROUTING COMMUNICATION NETWORK, IEEE, February 1996, pages 676-680. | |
| <input type="checkbox"/> Further documents are listed in the continuation of Box C. | | <input type="checkbox"/> See patent family annex. |
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