

(12) **United States Patent**  
**Pearce et al.**

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 (45) **Date of Patent:** **Apr. 29, 2003**

- (54) **DUPLICATE IGNORE DELAY TIMER FOR ARP LIKE PROTOCOL MESSAGES USING ARE PROTOCOL**
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- (73) Assignee: **Cisco Technology, Inc.**, San Jose, CA (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **09/283,124**
- (22) Filed: **Mar. 31, 1999**
- (51) **Int. Cl.**<sup>7</sup> ..... **H04L 12/56; H04J 3/16**
- (52) **U.S. Cl.** ..... **370/401; 370/403; 370/469; 709/242**
- (58) **Field of Search** ..... **370/231, 235, 370/248, 351, 386, 389, 392, 401, 402, 403, 410, 469, 466, 467, 474; 709/242; 379/221.01, 265.03**

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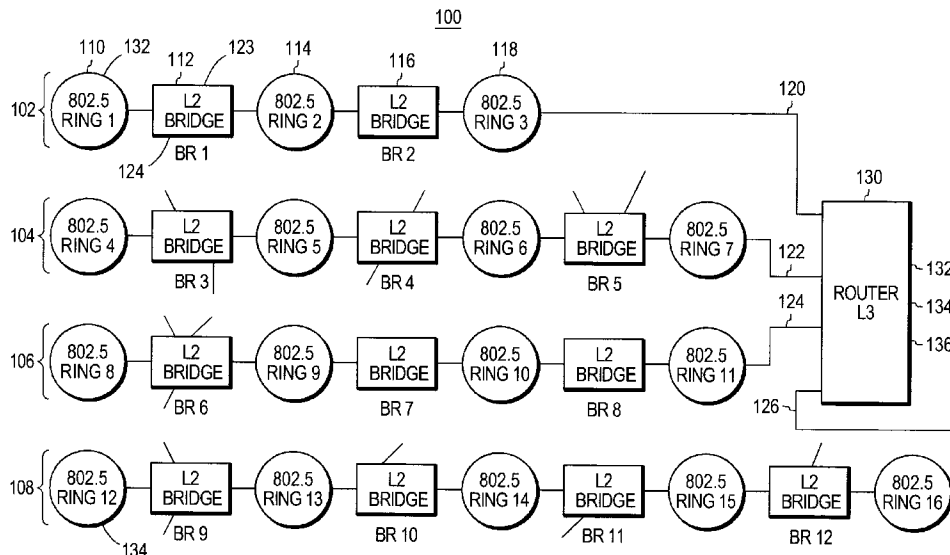
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(57) **ABSTRACT**

A router transmits an ARP Explorer request packet onto a subnetwork in order to learn the route (RIF information) from the router to an end station. The end station receives a plurality of ARP Explorer request packets from the router because of multiple paths in an SRB network, and the end station transmits an ARP Explorer response packet in response to each ARP Explorer request packet received. The invention adopts the path of the first ARP Explorer response packet received by the router from the end station for the RIF information from the router to the end station, and uses a “duplicate ignore” timer in order to avoid freezing this route into the router tables. The timer begins running upon receipt of the first ARP Explorer response packet, and expires after an “update time interval”. No further ARP Explorer response packet is processed until after expiration of the update time interval.

**16 Claims, 12 Drawing Sheets**



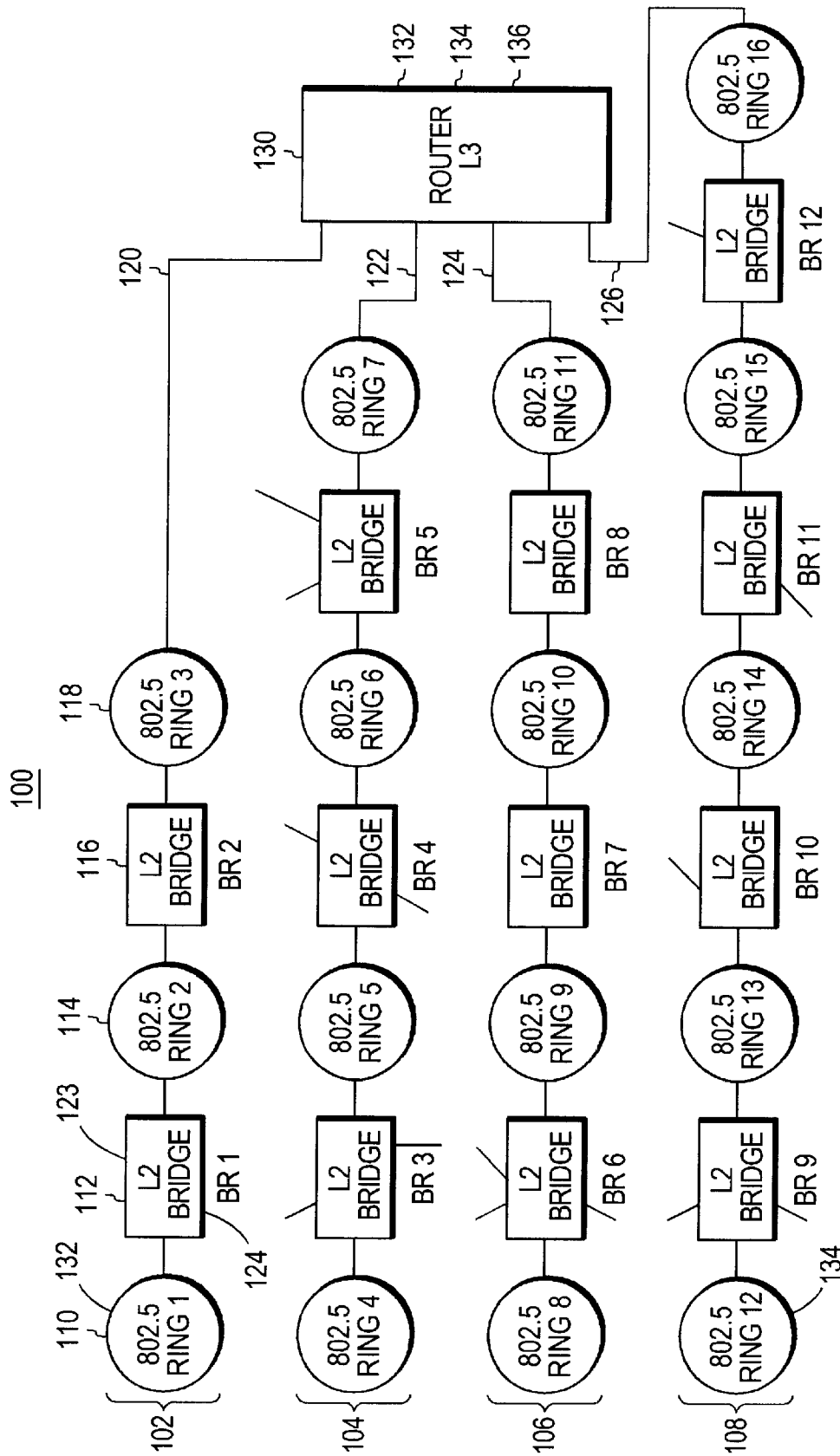


FIG. 1

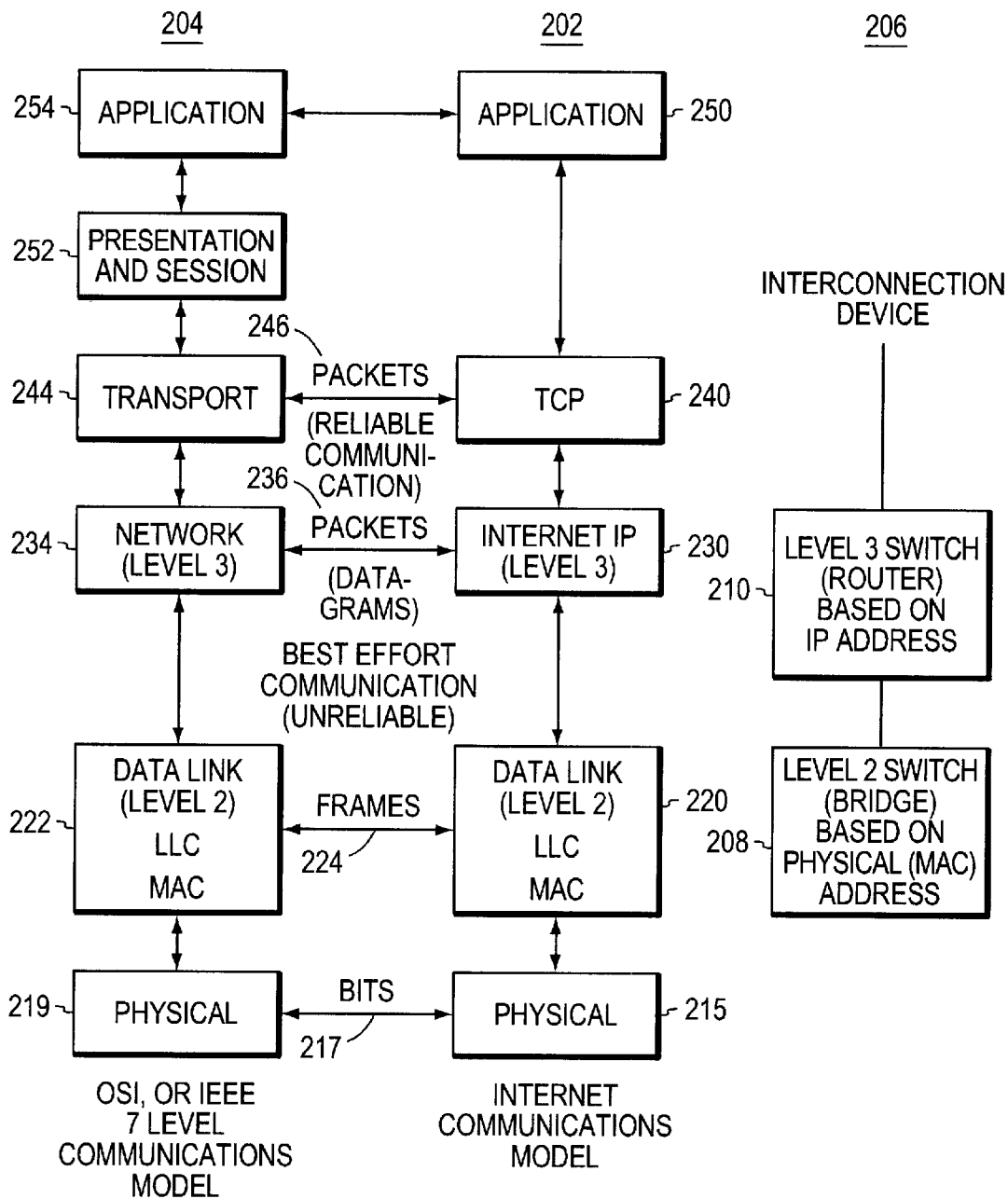


FIG. 2

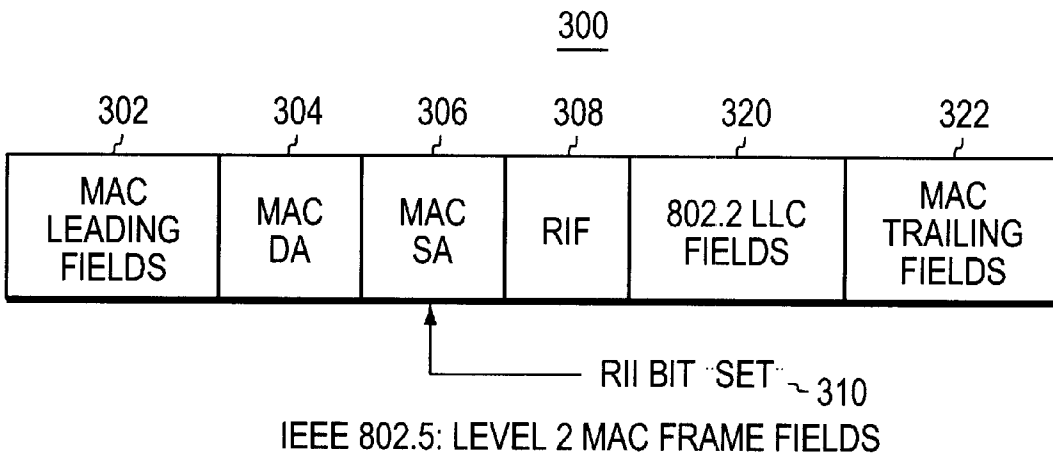


FIG. 3

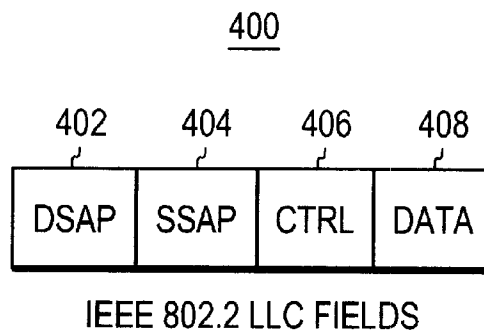


FIG. 4

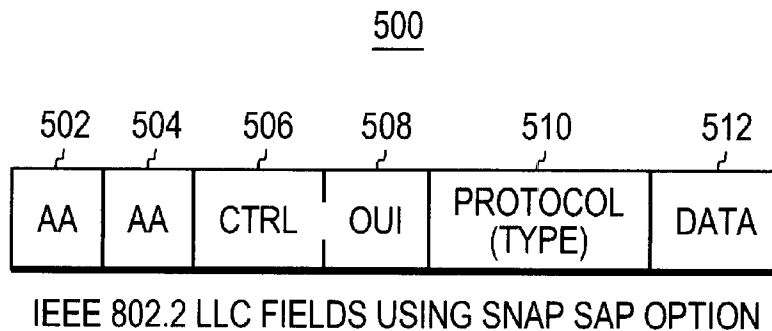


FIG. 5

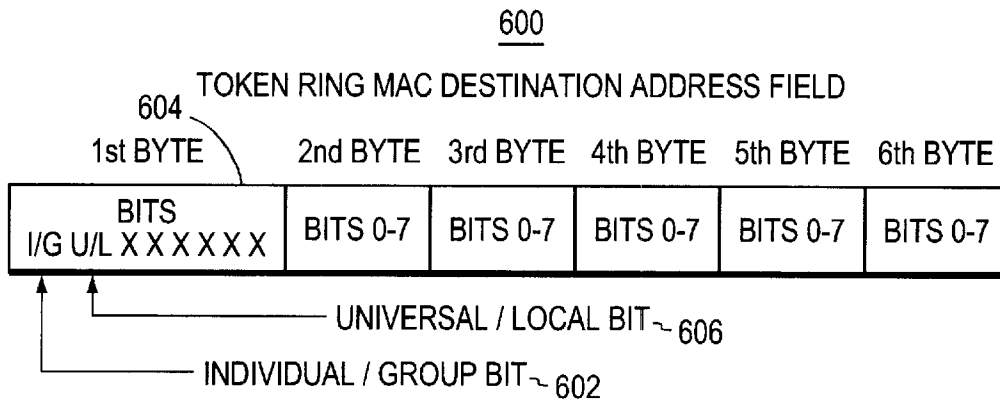


FIG. 6A

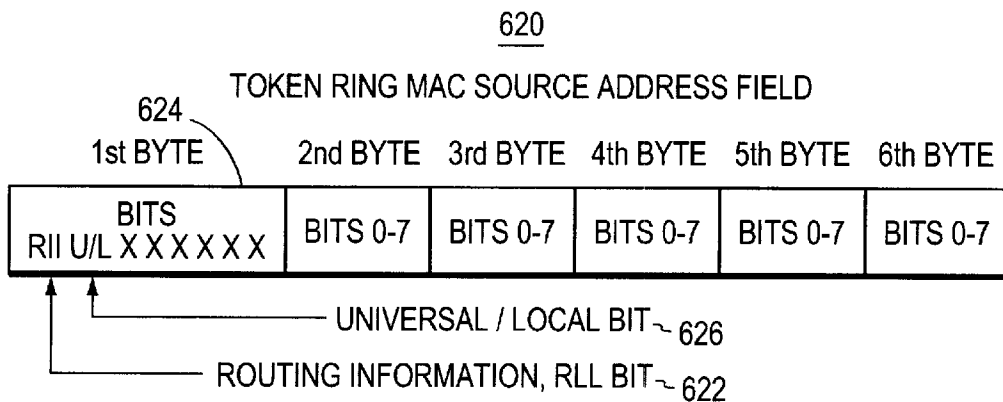


FIG. 6B

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