



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

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- (54) **METHOD AND SYSTEM FOR DYNAMICALLY TRIGGERING FLOW-BASED QUALITY OF SERVICE SHORTCUTS THROUGH A ROUTER**
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- (73) Assignee: **AT&T Corp.**, New York, NY (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.: **09/221,853**
- (22) Filed: **Dec. 29, 1998**
- (51) **Int. Cl.**⁷ **G01R 31/08**; H04L 12/28
- (52) **U.S. Cl.** **370/235**; 370/351; 370/401
- (58) **Field of Search** 370/230, 231, 370/232, 233, 235, 252, 254, 401, 402, 412, 413, 466, 474, 351

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Assistant Examiner—Duc Ho

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(57) **ABSTRACT**

A method and system for dynamically triggering flow-based quality of service shortcuts through a router is disclosed. The method further includes the steps of receiving a data packet at a router, determining whether a shortcut has been set up for a data flow to which said packet belongs, checking the status of an onset trigger counter when no shortcut exists, and when a current value of said onset trigger exceeds an onset trigger value, setting up a new shortcut for said data packet belonging to said data flow. The method of the present invention includes a dynamic system for adjusting state variable to control the number of shortcuts in existence and the adjusting the shortcut set up rate for optimal router switching efficiency.

23 Claims, 7 Drawing Sheets

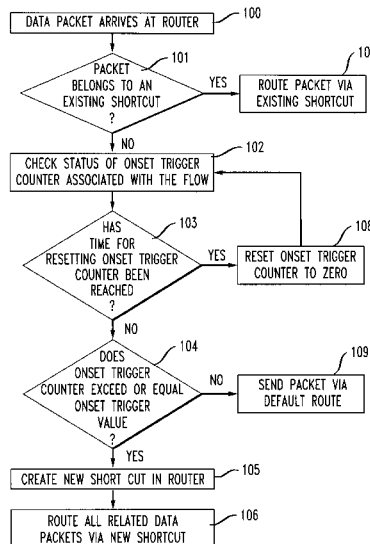


FIG. 1

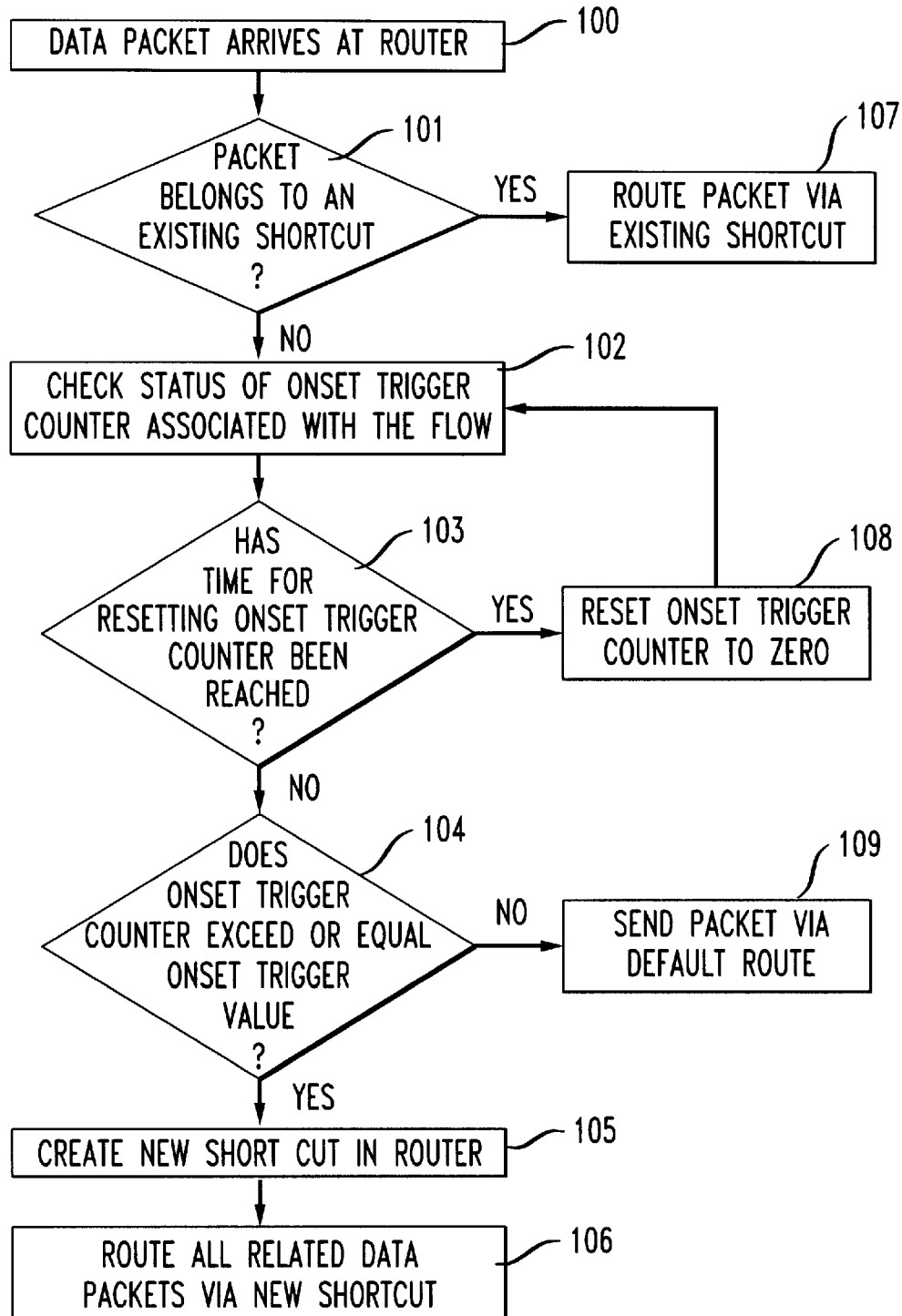


FIG. 1a

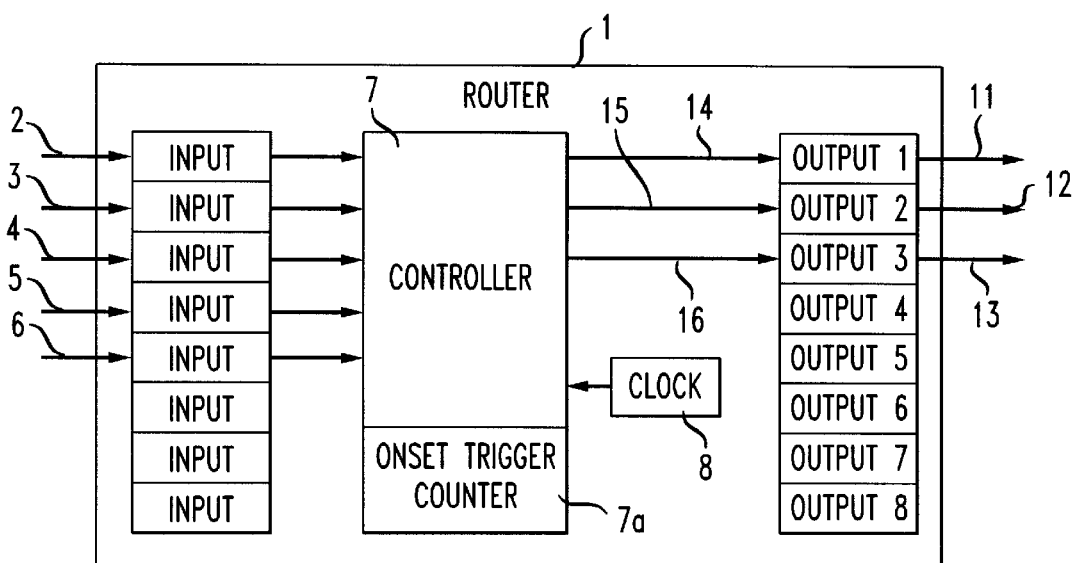
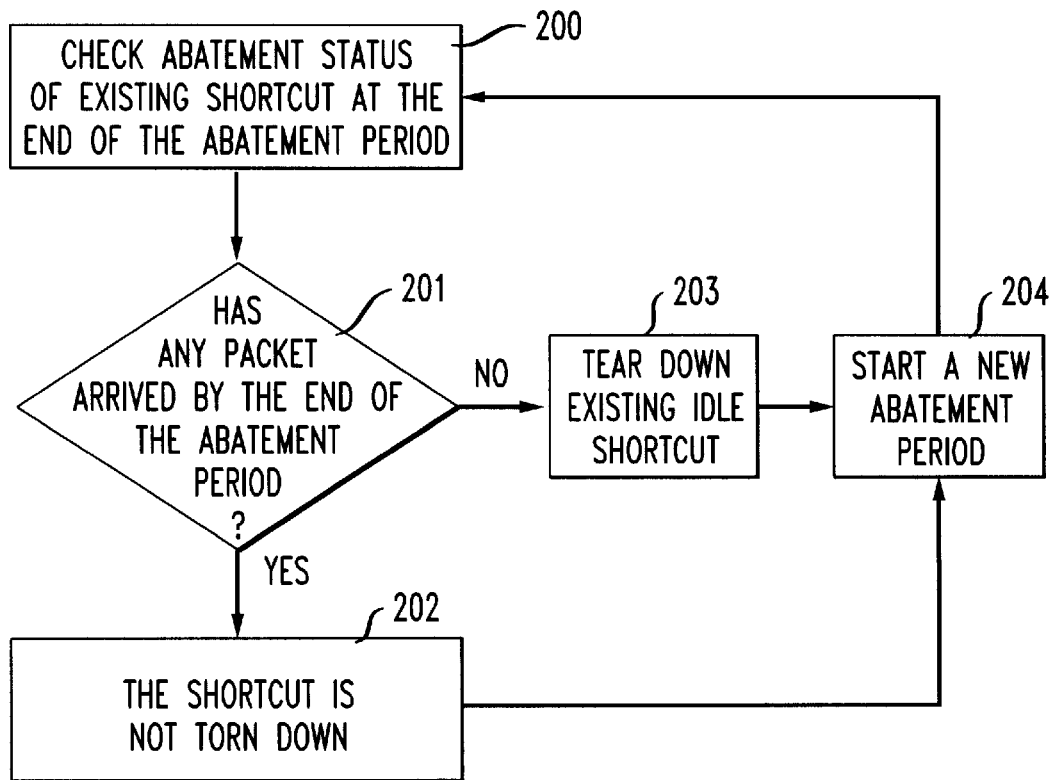
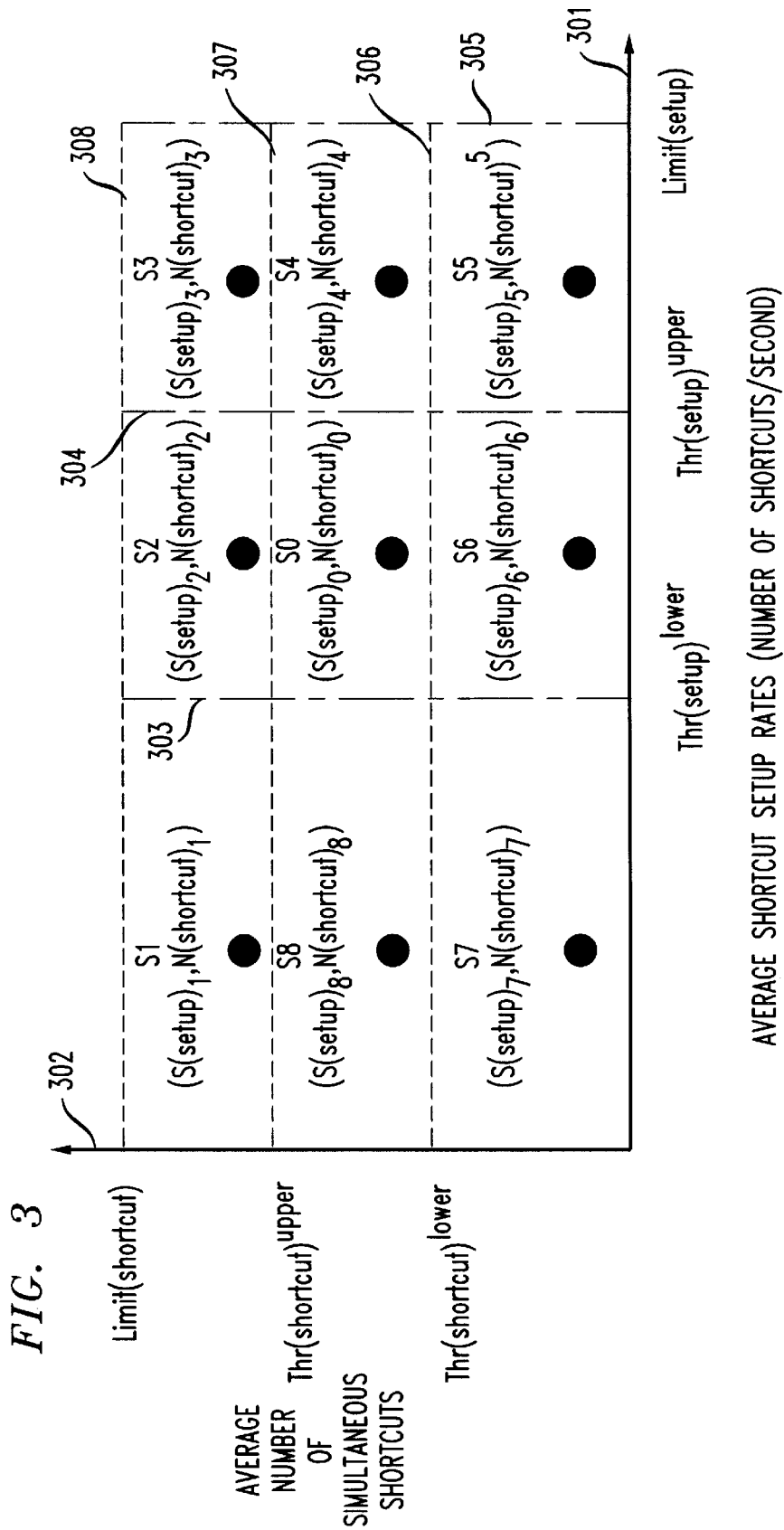


FIG. 2





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