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Li et al.

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- (54) **ENHANCEMENT OF EXPLICIT CONGESTION NOTIFICATION (ECN) FOR WIRELESS NETWORK APPLICATIONS**
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- (52) **U.S. Cl.** **370/229; 370/249**
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(57) **ABSTRACT**

An Explicit Congestion Notification (ECN) method is disclosed for wireless applications to avoid network congestion in a TCP/IP packet-switched network. Such method comprises transmitting, at a source node, data packets to a destination node, via at least an intermediate node; determining, at the intermediate node, if an incipient congestion is encountered, setting a Congestion Experienced (CE) flag in each data packet to notify congestion; sending, at the destination node, an ECN-Echo acknowledgment packet back to the source node to inform congestion; reducing, at the source node, a congestion window and a transmission rate to avoid congestion; if the packet loss is due to congestion, re-transmitting, at the source node, only a lost packet to the destination node; alternatively, if the packet loss is due to transmission error, re-transmitting, the lost packet to the destination node, while increasing a round-trip timeout but maintaining the same congestion window.

26 Claims, 7 Drawing Sheets

