

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

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(54) **REMOTE ACCESS SERVER FOR MULTIPLE SERVICE CLASSES IN IP NETWORKS**

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(51) Int. Cl.⁷ **H04J 3/14**; H04L 12/56

(52) U.S. Cl. **370/230**; 370/235; 370/401; 370/420

(58) Field of Search 370/230, 252, 370/352, 389, 391, 395.21, 395.42, 401, 420, 421, 444, 236, 230.1, 231, 235

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,011,804 A * 1/2000 Bertin et al. 370/468
 6,160,793 A * 12/2000 Ghani et al. 370/236
 6,167,027 A * 12/2000 Aubert et al. 370/230
 6,249,519 B1 * 6/2001 Rangachar 370/356

OTHER PUBLICATIONS

Memorandum entitled Remote Authentication Dial In User Server (RADIUS) by C. Rigney, A. Rubens, W. Simpson and S. Willens, dated Apr. 1997.

* cited by examiner

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(57) **ABSTRACT**

A method and system for assigning priority or classes of service of messages delivered in a packet-based network. The method and system allows for implementation of differentiated classes of service according to the requirements of the network application or user.

19 Claims, 6 Drawing Sheets

Router Stamping

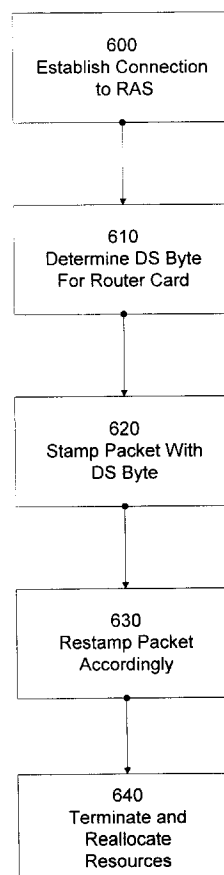


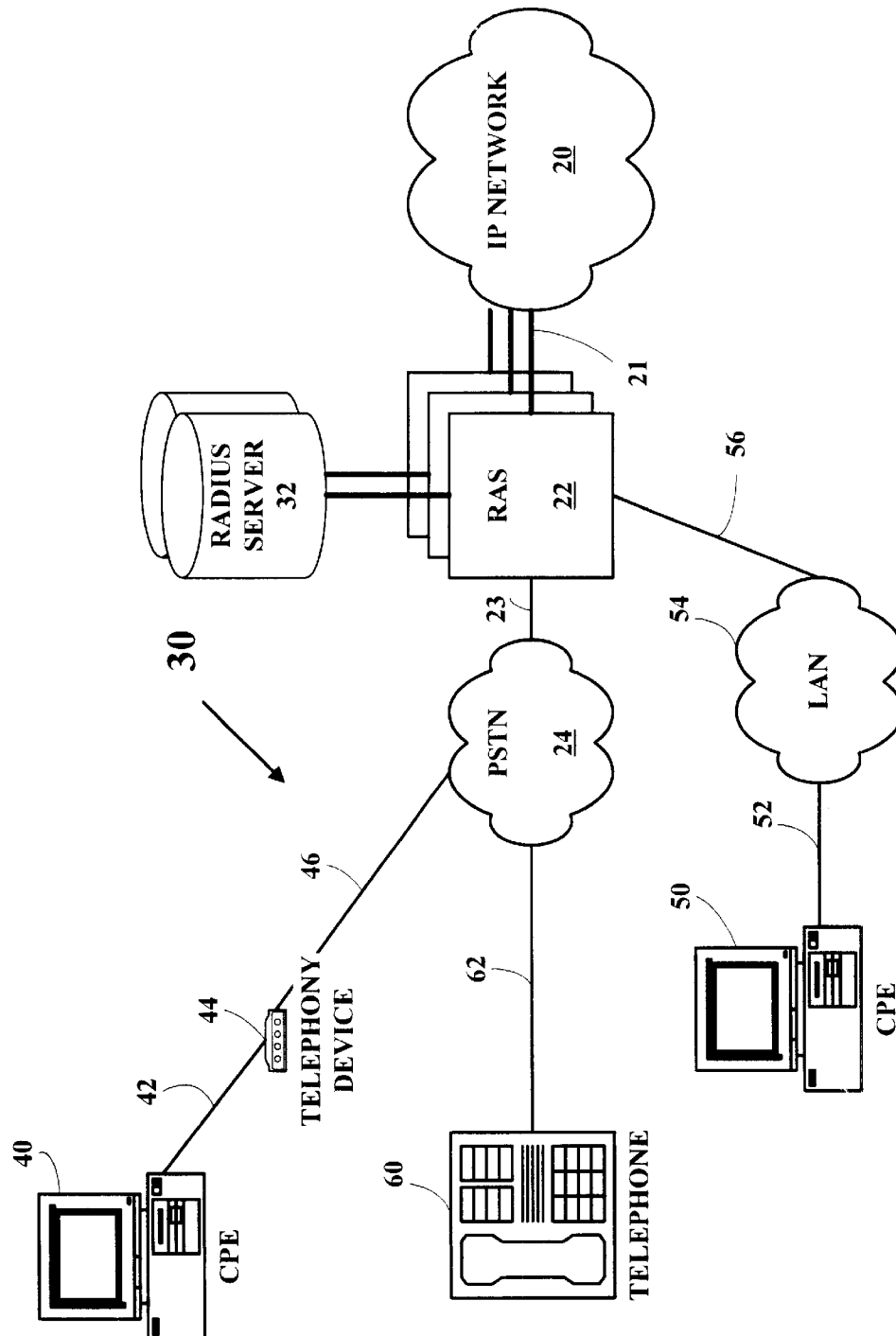
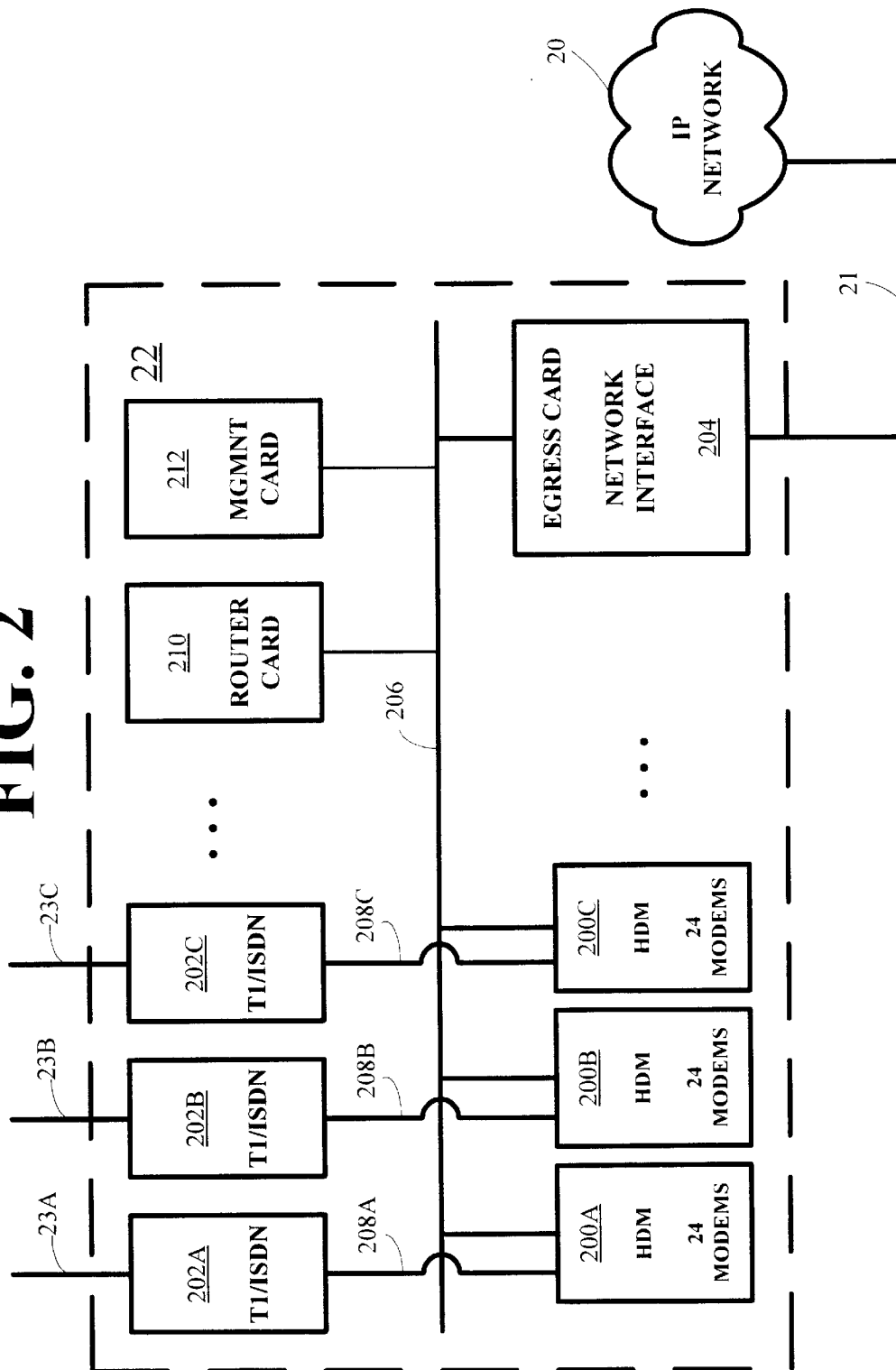
FIG. 1

FIG. 2

VER	IHL	TOS	TOTAL LENGTH
IDENTIFICATION			FRAGMENT OFFSET
TIME-TO-LIVE	PROTOCOL	HEADER CHECKSUM	
SOURCE ADDRESS			
DESTINATION ADDRESS			
OPTIONS			

IP HEADER

FIG. 3

FIG. 4

400

USER PROFILE DATABASE

410	412	414	416	418	420	422	424
USER NAME	USER ID	DEVICE1	DEFAULT	SECONDARY	ALTERNATE 1	ALTERNAT 2	ALTERNATE 3
GUIDO SCHUSTER	schuster	PC	DS BYTE	DS BYTE 0	DS BYTE 1	DS BYTE 2	DS BYTE 3
IKHLAQ SIDHU	sidhu	PC	DS BYTE	DS BYTE 0	DS BYTE 1	DS BYTE 2	DS BYTE 3
JACEK GRABIEC	grabiec	PC	DS BYTE	DS BYTE 0	DS BYTE 1	DS BYTE 2	DS BYTE 3
MICHAEL BORELLA	borella	PC	DS BYTE	DS BYTE 0	DS BYTE 1	DS BYTE 2	DS BYTE 3
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